PACKARD

ONE TWENTY

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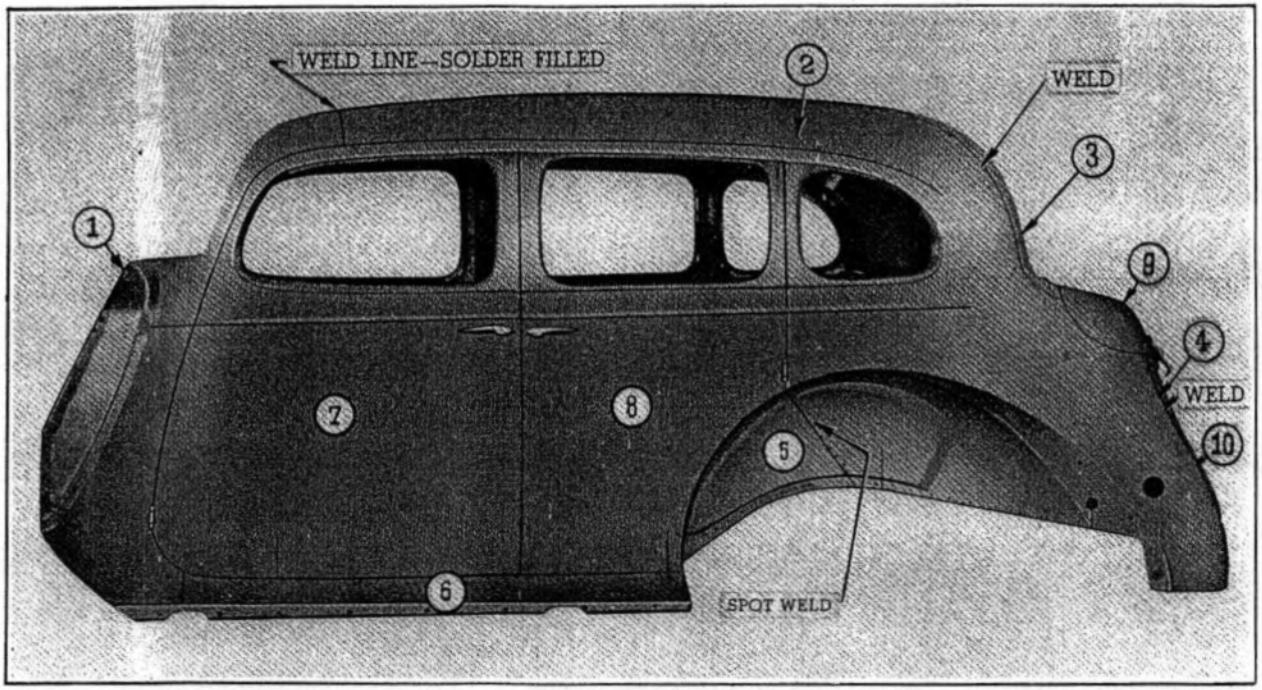
BODY MANUAL

PACKARD MOTOR CAR CO.
SERVICE DEPT.

120 BODY CONSTRUCTION AND SERVICE



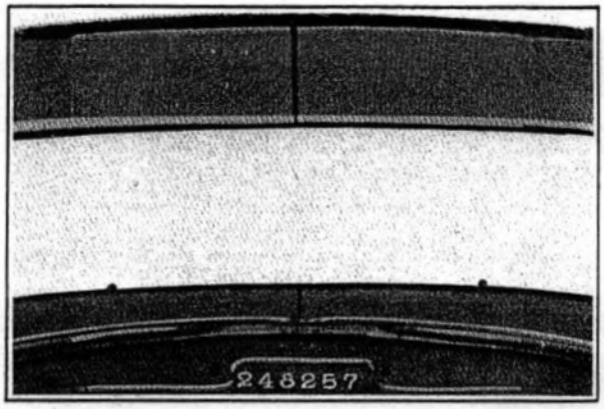
1. Front End Assembly
2. Side Quarter and Roof Panel
3. Rear End Upper Panel
4. Rear End Lower Panel
5. Dog Leg Panel
6. Body Splasher Panel
7. Front Door
8. Rear Door
9. Trunk Lid
10. Tire Door

General

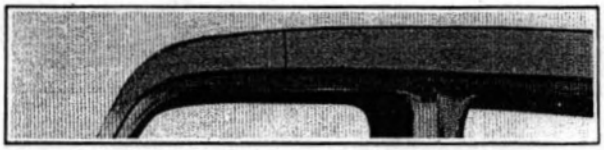
The One Twenty bodies are all-steel construction except the wood frame underbody and the roof frame, used mainly for sound silencing.

The body is composed of six major units associated to form the body shell. These units are the underbody assembly, the cowl assembly, the rear end or balloon assembly, the roof frame assembly and the center pillars, right and left.

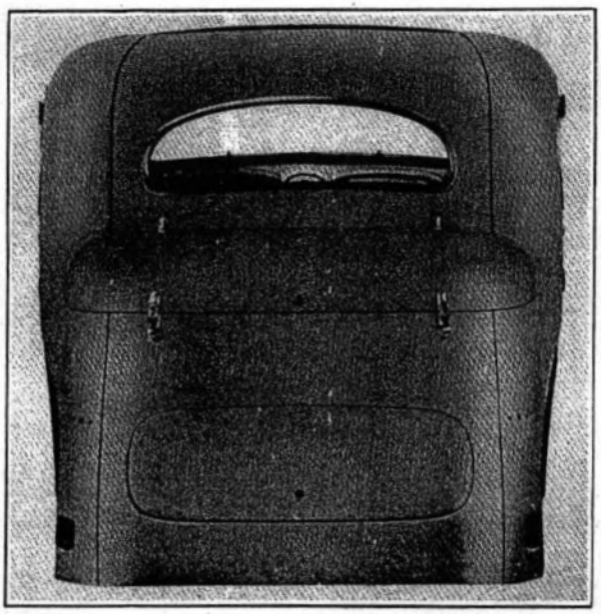
All body panels are welded to steel structural members in the assemblies except the roof panels which are nailed to the roof rails. The nails are concealed underneath the roof rail header panels which are attached with screws.



Cowl Panel Weld Line—Solder Filled

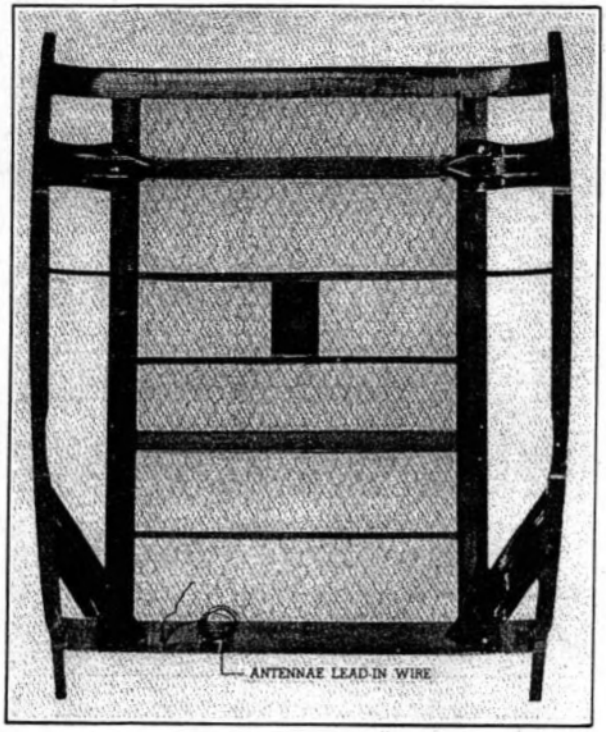


Solder Filled Weld



Welding Lines—Not Solder Filled

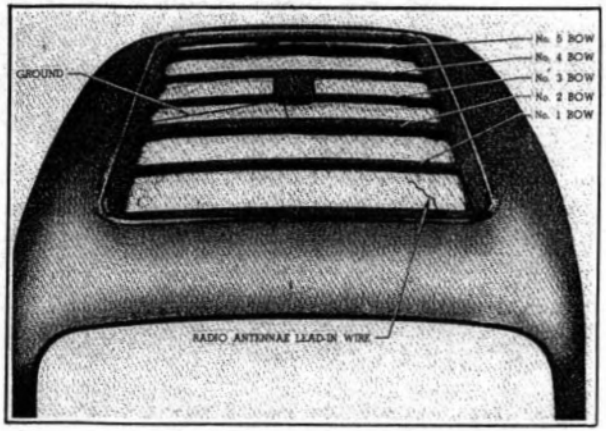
Roof Construction



Roof Unit Assembly

The roof unit is composed of a heavy wood frame reinforced with wide steel braces. The upper surface is covered with a wire mesh netting which is galvanized at all joints. This serves as an antenna for radio as well as a support for the top deck.

The lead-in wire is soldered to the wire mesh netting at the front left corner and enters the body through the hollow section of the front left hinge pillar.



Roof Construction and Body Wiring Ground

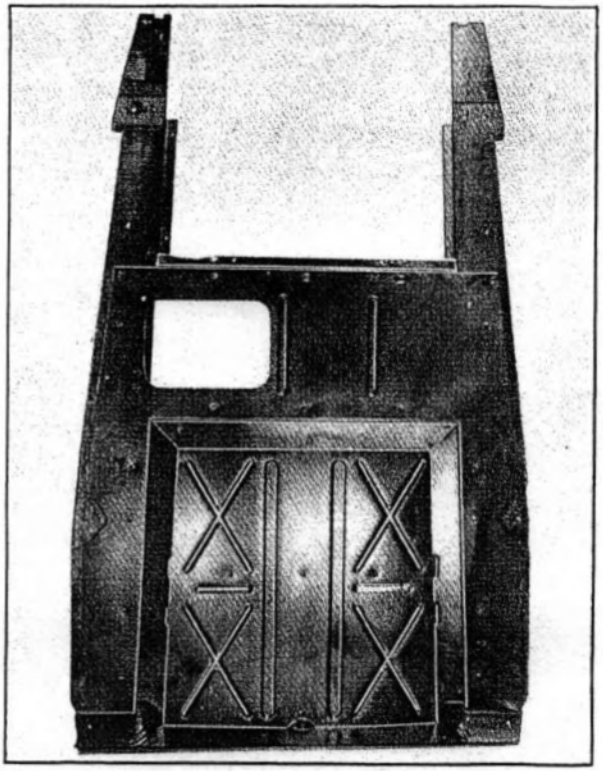
Body Wiring Ground

The hot wire comes through the right front pillar and follows the roof rail and down through the center pillar to the switch, and then up the pillar again to the rear side of No. 2 bow and thence to the dome light. The ground wire (green) runs from the dome light to a screw located in the roof support bracket on the rear right side of No. 2 bow.

Floor and Sill Construction

The underbody is composed of wood main side sills and stamped steel floor panels. The rear edge of the floor panel which forms the heel panel is spot welded to the front edge of the rear seat panel, which is a part of the rear end assembly.

The wheel compartment floor is assembled in the chassis.

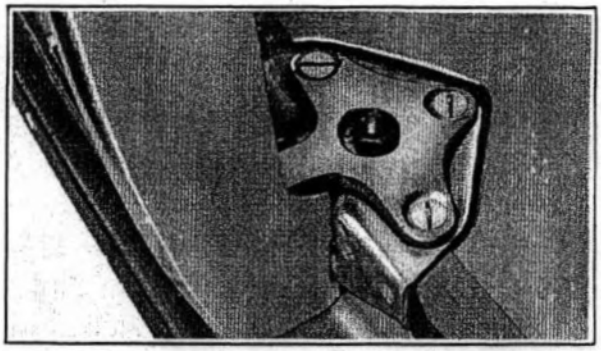


Under Body Unit Assembly

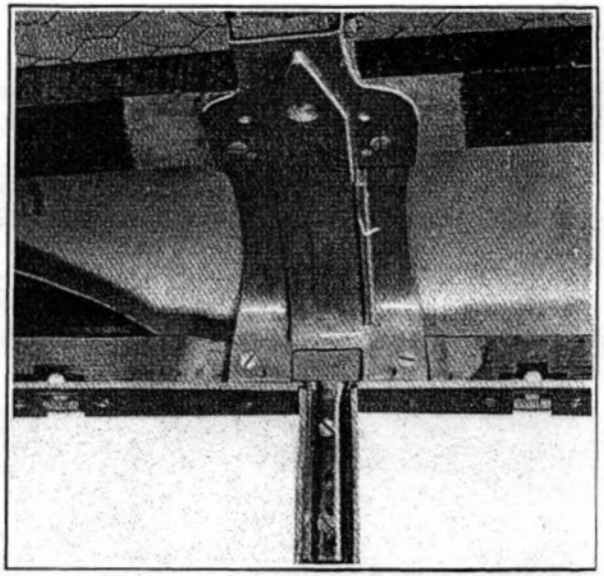
Center Pillar Bracing

The center pillar is attached to the roof rail by means of a steel T brace. This brace is bolted to a solid all-steel center pillar and through the roof rail. The roof reinforcing brace is welded to the T brace and bolted to the roof sub rails.

The lower end of center pillar is attached to the side sills by means of a triangular metal brace with three bolts which enter from the top and four large wood screws from the side.



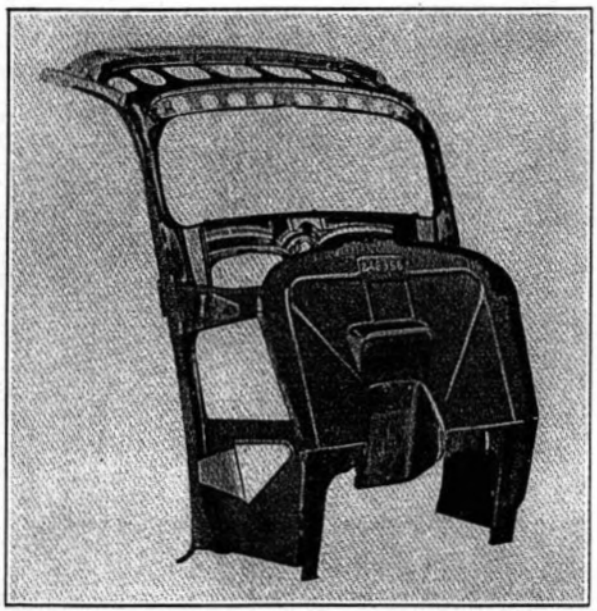
Center Pillar to Sill Attachment



Center Pillar to Roof Rail Bracing and Door Wedge Plates

Front End Unit

Cowl Unit Assembly

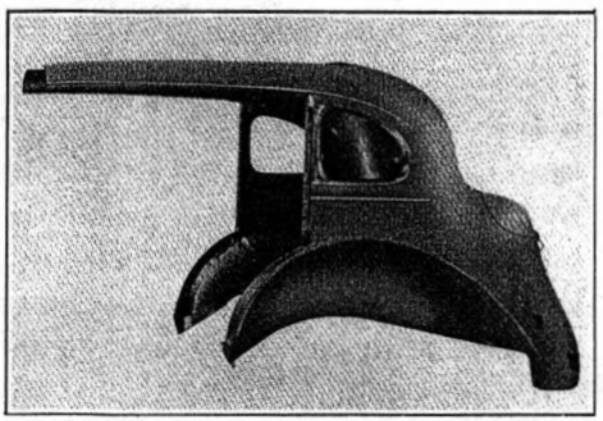


Structural View of Cowl before Panel is Applied

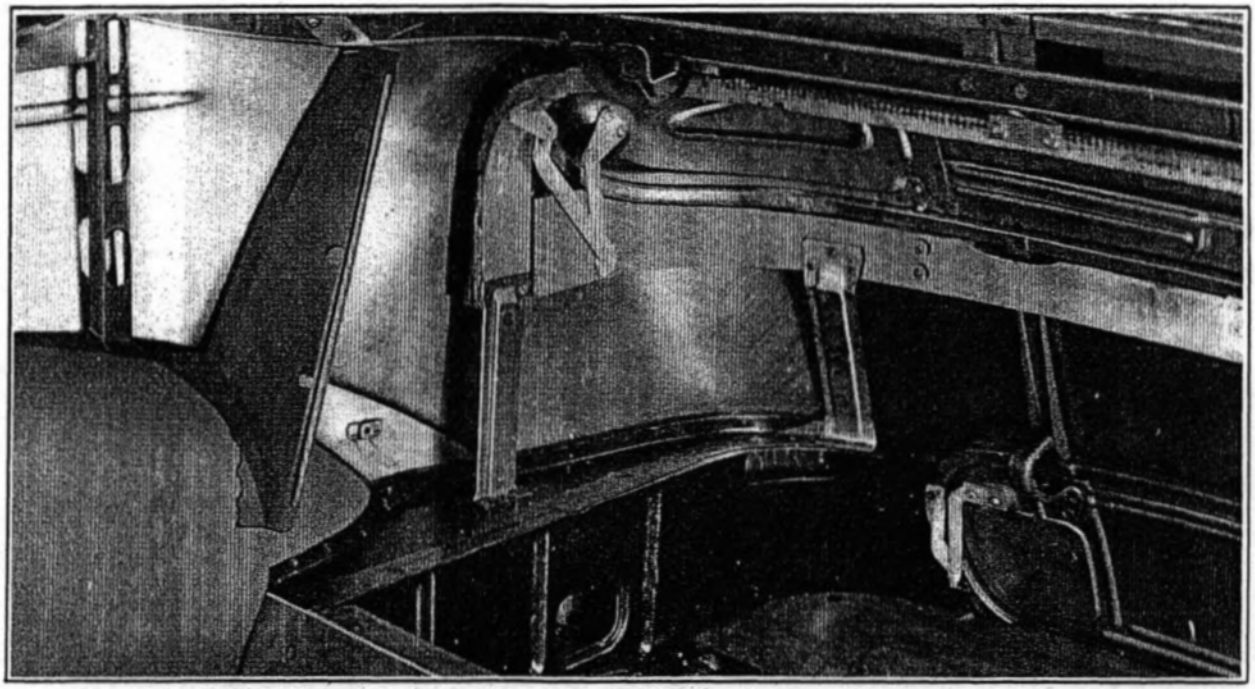
The cowl unit assembly is composed of seven major units which are welded into a solid unit. These units are the H frame, toe board brackets, upper hinge supports, dash panel and cowl panel. There are no wood parts in this assembly.

Rear End or Balloon Unit

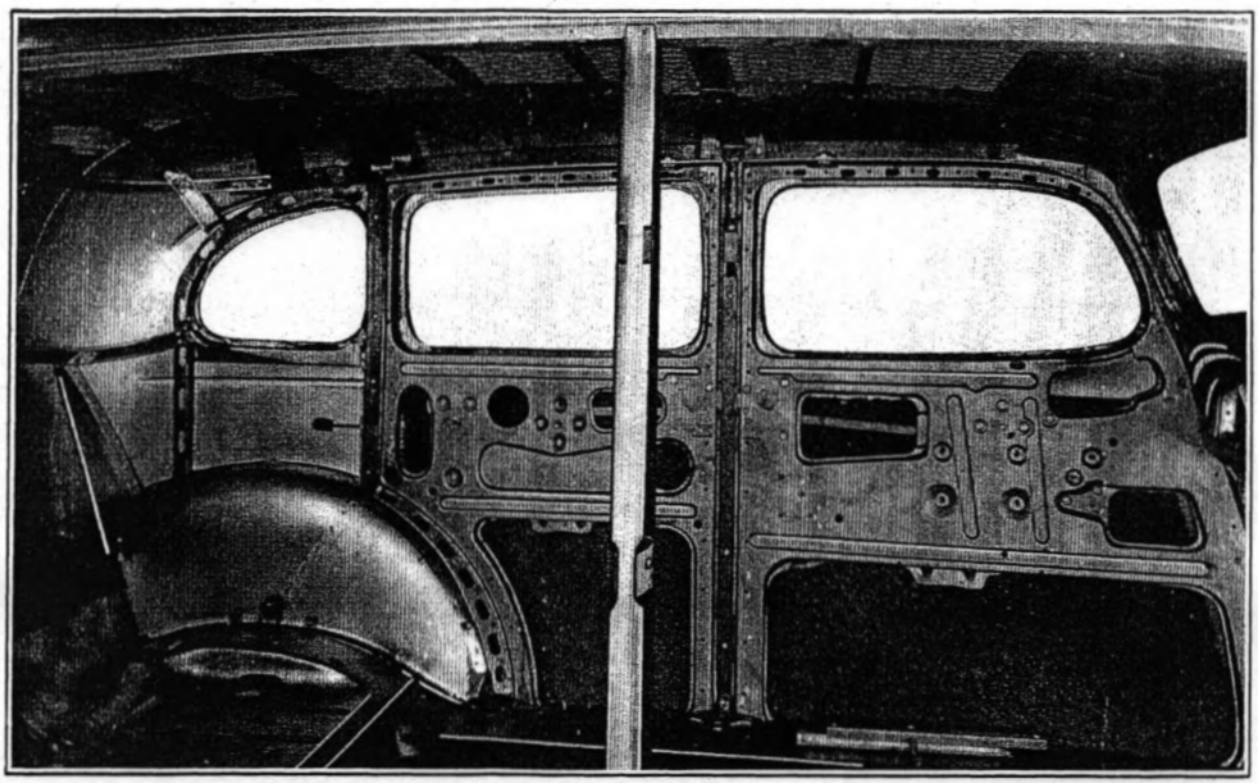
This unit is composed of numerous stamped steel units which form the structural support of the outer panel. The outer panel is composed of six units which are welded in the panel assembly. They are the right and left quarter panels, right and left dog leg panels, upper back panel and lower back panel. The lower flange of the panel unit assembly is welded to the rear seat floor pan, the side sill reinforcement panels and the rear sill cross panel. The trunk opening is reinforced with wood-framing which will be superseded by a metal structure after 17,400 cars of B Series.



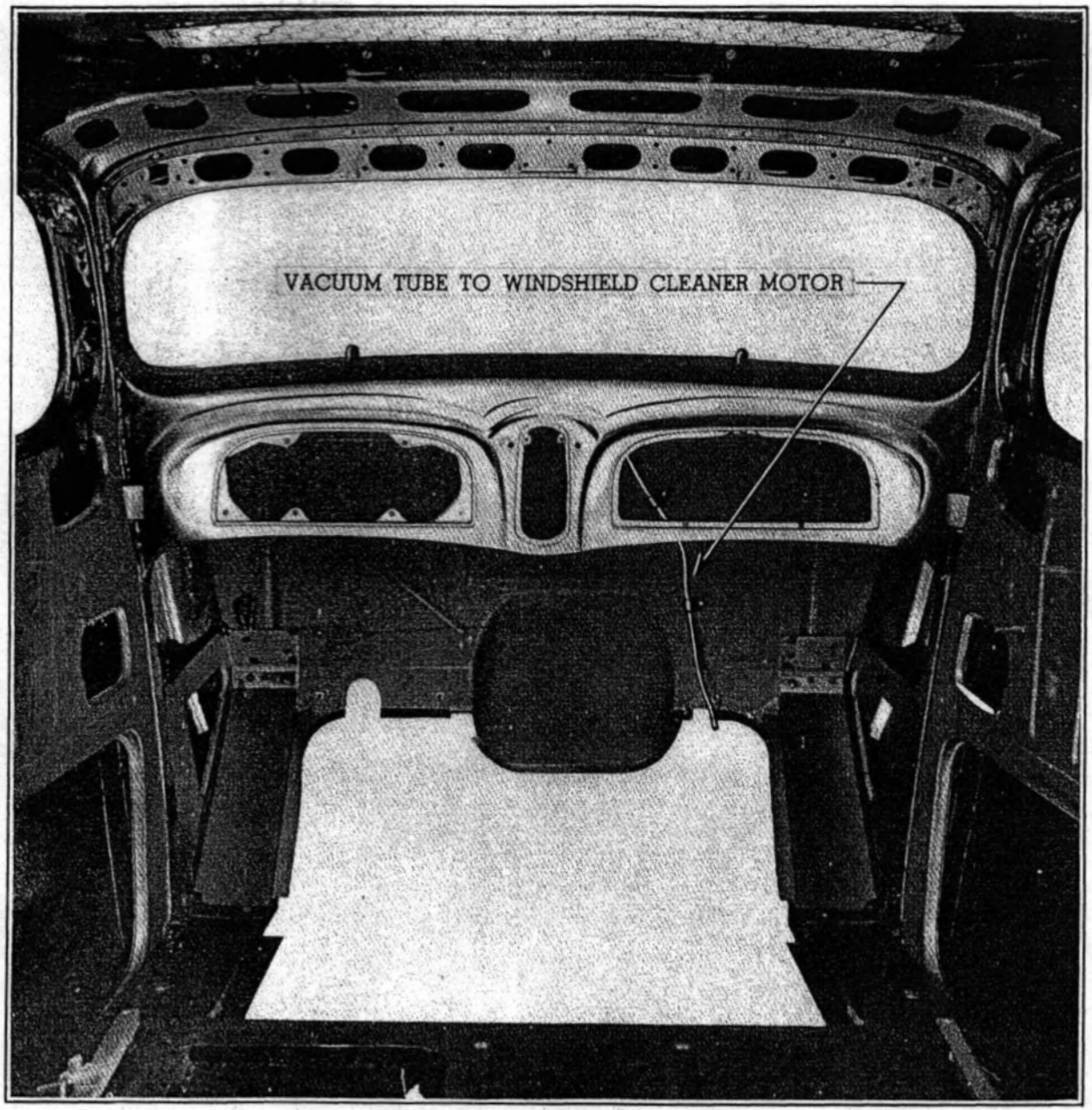
Body Rear Panel or Balloon Assembly



Rear End Interior



Side Interior



Interior Front View

BODY TRIM

Removing Dome Light

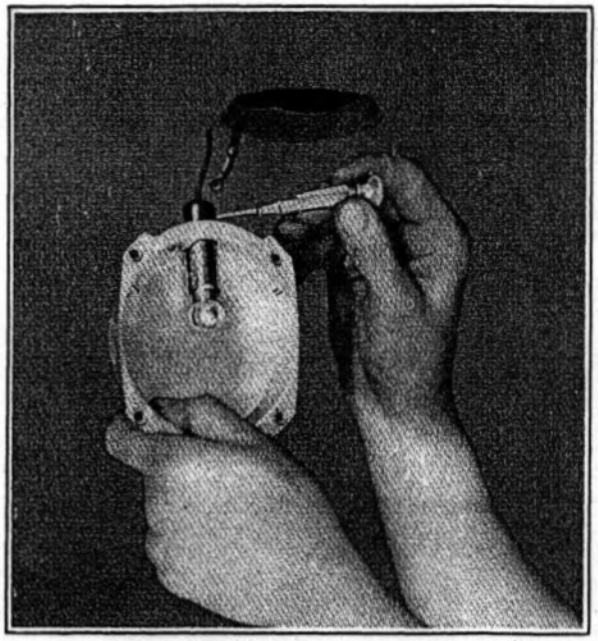
Remove cover by turning to left from a rear seat position. Press upward to release.

Remove four screws.

Remove ground wire which is attached to a small nut.

Loosen screw in plug.

Reverse operations to assemble.



Removing Dome Light

Remove Headlining

Remove rear seat cushion.

Remove rear seat back.

Remove quarter window garnish moulding.

Remove rear quarter trim.

Remove dome light.

Remove sun visor.

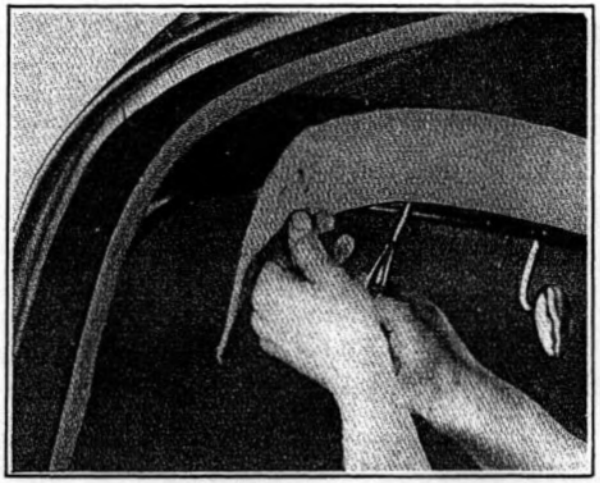
Remove rear view mirror.

Remove windshield header trim.

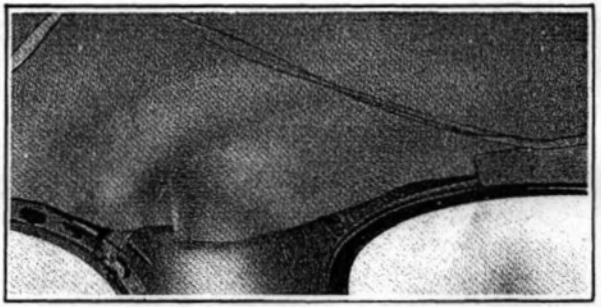
Remove wire filled binding by removing tacks.

Remove tacks in headlining.

Remove tacks through listings on roof bows.



Removing Windshield Header Trim Panel



Removing Headlining

Headlining Installation

1. Mark the center of roof bows with chalk. Fold the headlining lengthwise and mark the center with chalk.

2. Tack the listings to the bows matching the chalk marks on headlining and body, starting from the rear.

3. Start tacking at the front, then around the sides finishing up at the rear.

4. Reinstall quarter trim panels.

5. Tack and cut trim around dome light, and install dome light assembly.

6. Apply wire on binding, starting from either front corner continue around the body and finish at the other front corner.

7. Reinstall windshield header trim panel.

8. Reinstall quarter window garnish mouldings.

9. Reinstall sun visor.

10. Reinstall rear view mirror.

11. Reinstall rear seat back.

12. Reinstall rear seat cushion.

NOTE—A slightly torn headlining near the edge may be stretched out by loosening the headlining along the side and drawing tacks in listings near the torn spot.

First stretch listing and retack, then stretch headlining and retack. If the tear should be longer than ½" to 1", it will require cross stitching the cut and then cementing a patch several inches square on the blind side of the material. Cement the headlining and the trim rail with trimmer's cement, allowing it to dry a few minutes before pressing together. Reinstall tacks along the edge.

Remove Quarter and Upper Back Trim

1. Remove trim back.

   Remove two screws which retain the back at the bottom. Lift trim back upward to release from retaining hooks at the top.

   Reverse operations in assembling.

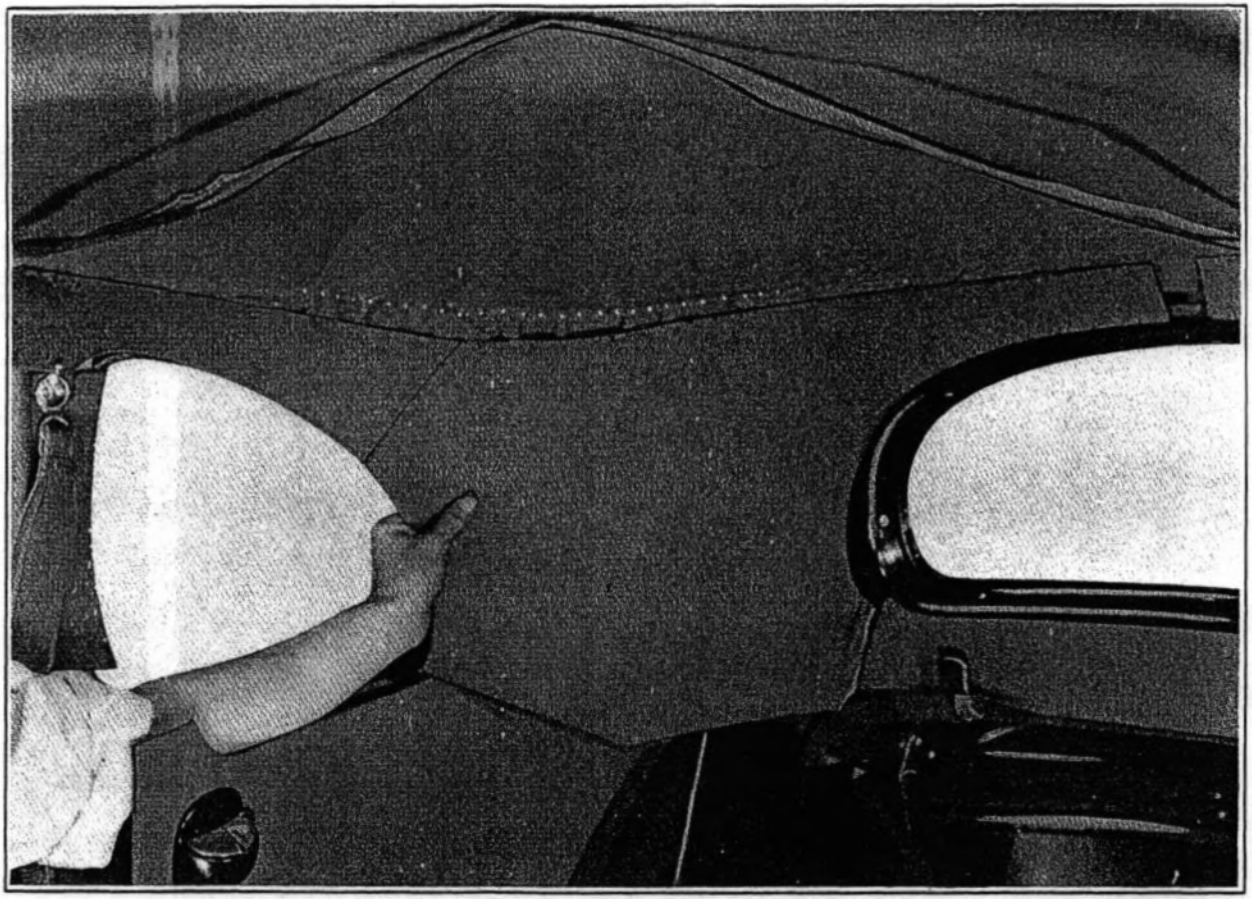
2. Remove tacks at bottom edge of trim.

3. Remove tacks in "wire-on" binding at the base of headlining.

4. Remove tacks at upper edge of quarter trim panel.

5. Remove trim panel without disturbing back light moulding.

   Reverse operations when assembling.



Removing Rear Quarter Trim Panel

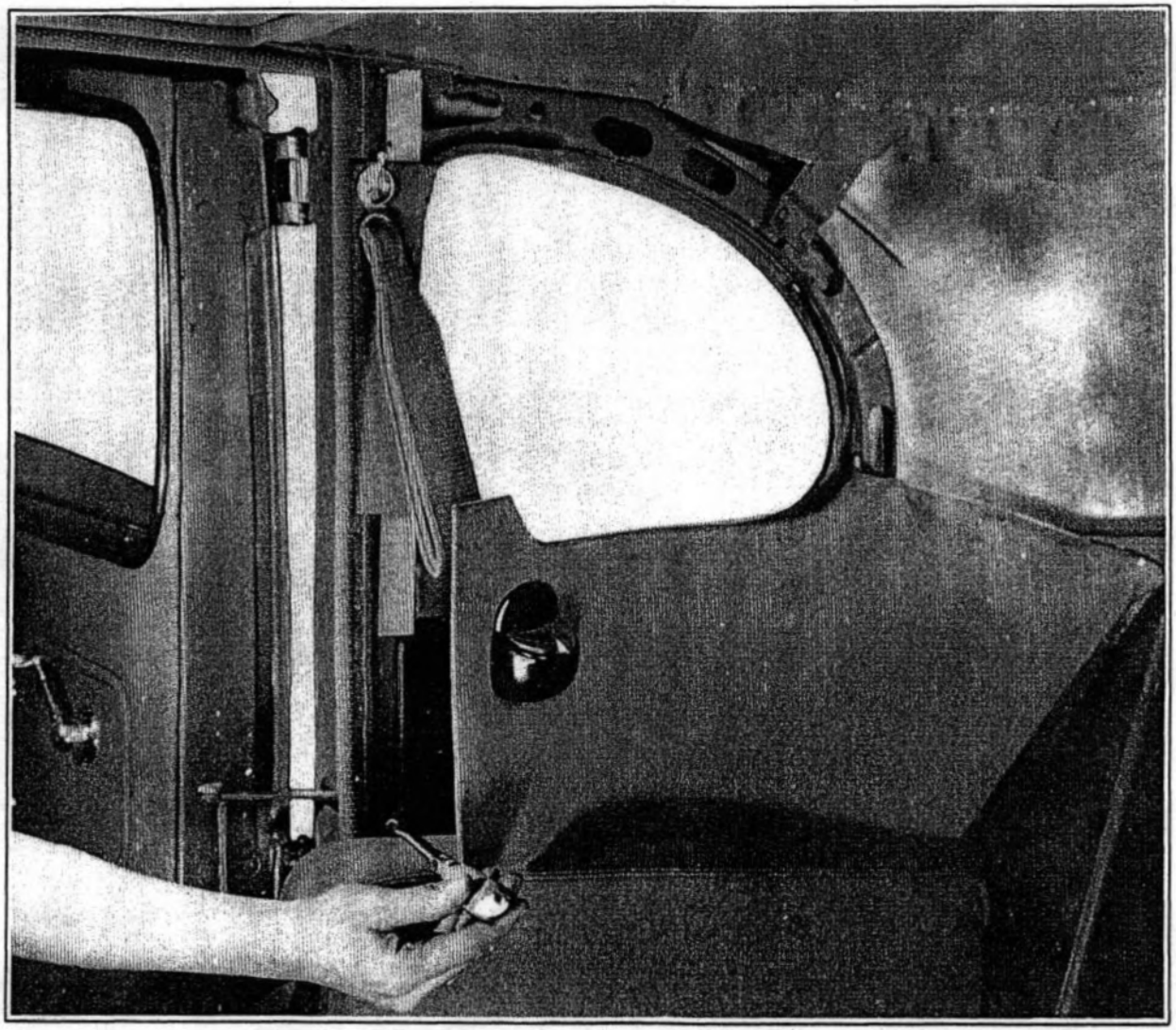
Remove Rear Seat Arm Rests

Remove rear seat back and cushion:

1. Release three retaining clips at the base of arm rest.
2. Insert a screw driver in the slit in trim cloth located about 3″ from the rear and top of arm rest.

   Remove one screw.
3. Remove one screw at top front of arm rest.
4. Release lower quarter trim panel at hinge pillar.
5. Pull out two drive nails at body brace in floor.
6. Release panel along dog leg pillar using a screw driver to disengage fasteners.
7. Pull tacks in wind hose which is attached to arm rest.

   Reverse the operations to reassemble.



Removing Rear Seat Arm Rest

Remove Dash Silencer Pad

1. Remove glove box.

2. Raise the hood and tap the ends of all snap fasteners on the front face of the dash panel.

3. Disconnect two cowl ventilator drain tubes.

4. Raise steering column grommet. Pry loose with the hands.

NOTE—Exercise care in removing pad to avoid tearing the fibre board inside panel.

In reassembling apply rubber cement in spots to the fabric face which contacts the inside of the dash panel.

Front End at Roof Rail Squeaks

Squeaks at the front end upper corners may be due to one or more of the following reasons:

1. Loose bolts which join the roof to the front end unit.

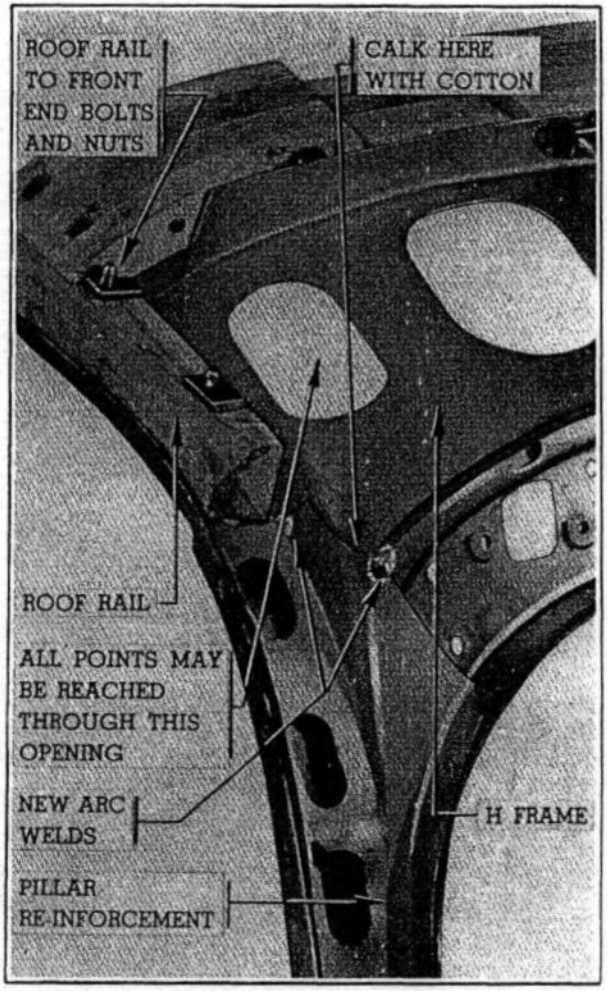
2. The mislocation of the nut on top of the roof rail which contacts the roof panel when the bolts are tightened.

3. A metal to metal contact at the top of the front pillar reinforcement and the H frame.

4. The formation of rust between the flanged edge of the roof rail facing and the lip of the roof panel which is attached to the roof rail with nails.

Correction

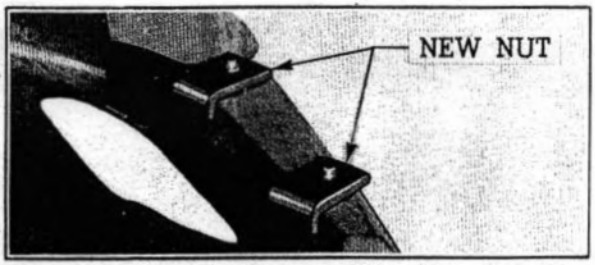
1-2. To tighten the bolts first remove the roof rail header by taking out five screws. The screw at the front end is about ½" from the joint of the facing and recess in the H frame. The joint and the head of the screw until recently have been solder-filled. Remove solder. Loosen the headlining from the front corner backward about twelve inches. The nuts may be reached through an opening in the header panel. Be sure there is clearance between plate and roof panel. To make sure of this insert a piece of thin cardboard up against the roof panel, then tighten screws.



Roof Rail to Cowl Assembly

3-4. Before replacing the header panel apply a strip of one-inch friction tape to the side of the roof rail and fold it on the underside. Clean the inside of the panel and apply a light coat of graphite grease.

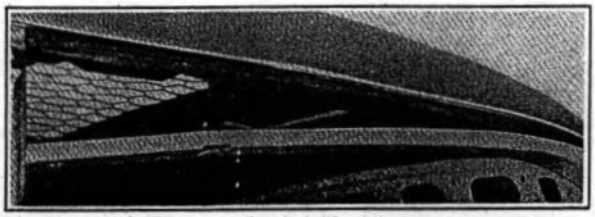
The metal to metal contact at the top of the pillar reinforcement and H frame may be cured by calking cotton in the joint with a thin blade of steel.



Roof Rail to Cowl Assembly—Showing New Tapping Plates

This condition has been eliminated on later cars by arc welding.

A new nut of heavier gauge steel with one end turned downward to prevent it from rotating has recently superseded the flat nut.



Roof Rail Facing dropped at rear to permit application of friction tape to eliminate squeaks

If a squeak is found to be due to the roof rail facing only it may be corrected without removing the entire facing. Remove all screws except one at the front, drop rear end sufficiently to apply friction tape.

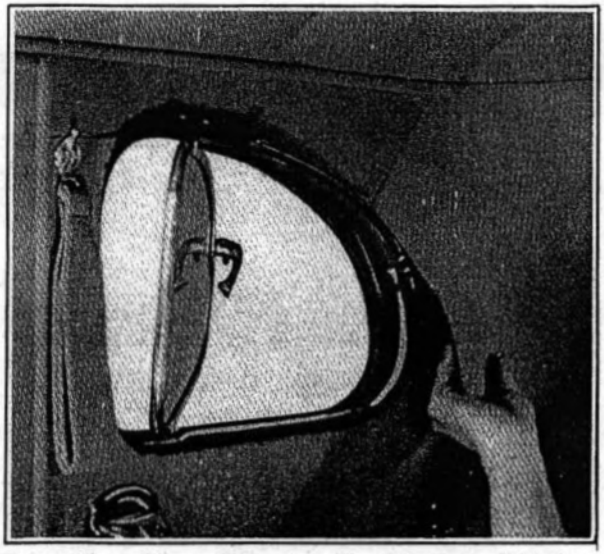
Remove Rear Ventilating Window

Remove garnish moulding.

Remove four screws which retain window frame to body.

Open window about three-fourths open.

Pull rear quarter trim toward inside of car to release attaching plate at rear of window frame.

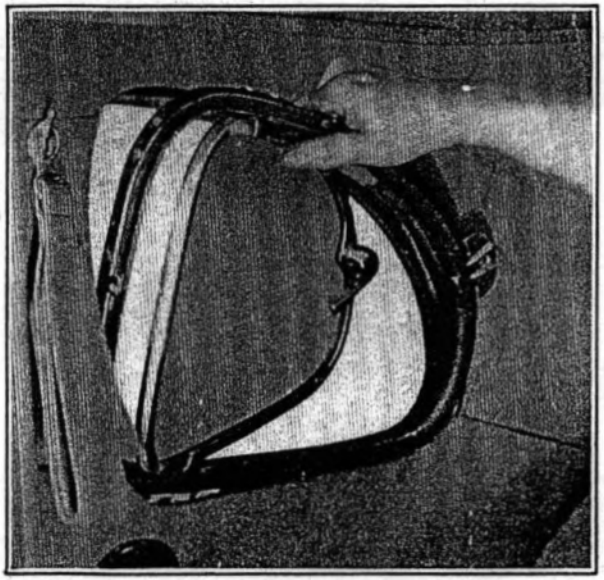


Removing Rear Quarter Ventilating Window (first operation)

Pull window assembly starting from the rear.

Reverse the operations to reassemble.

NOTE—Exercise care when pulling trim panel to avoid buckling. Check fitting of rubber lip to body on outside when reassembling the frame.

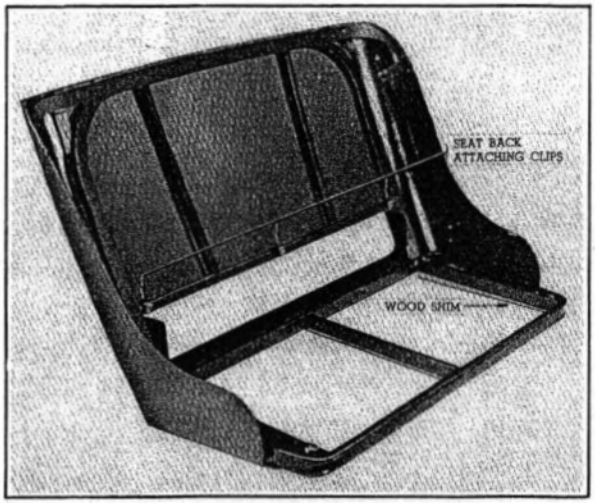


Removing Rear Ventilating Window

SEATS

Front Seat Unit

The front seat is constructed of hollow steel members welded into a complete unit to form the superstructure. The side panels are welded to this unit. The back panel is made of a heavy sheet of fibre board which is attached to the metal frame with Parker Kalon screws. There are two longitudinal wood units at the base of the seat frame which are bolted into metal gussets at the front and rear.

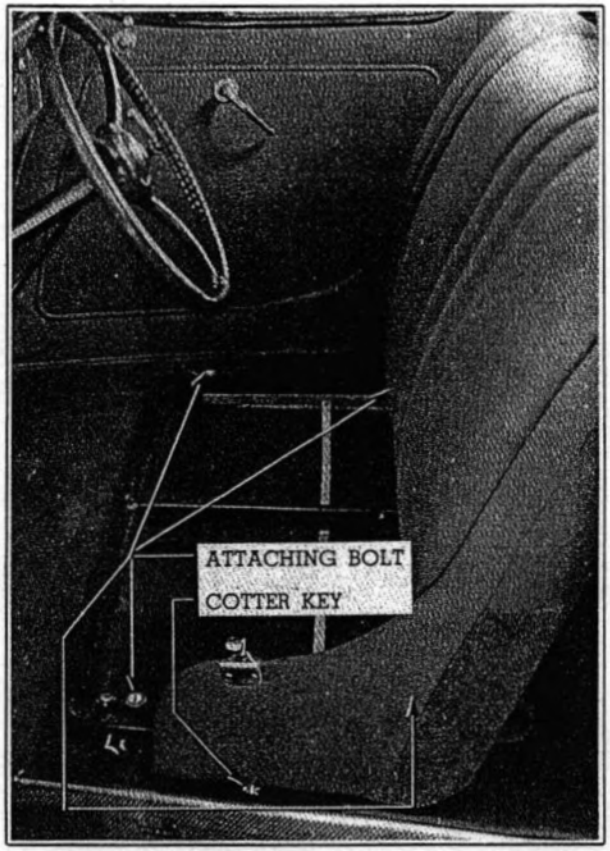


Standard Front Seat

The seat back is trimmed on a fixture and tacked on the bottom and sides. When installed it is held in place at the bottom with three metal prongs which are bent over the wire framework of the back. The top of the back is tacked to the top trim rail. The sides and back outer trim is sewed in a unit, slipped over the arms and tacked around the bottom and up to the corners around the top.

To Remove Seat

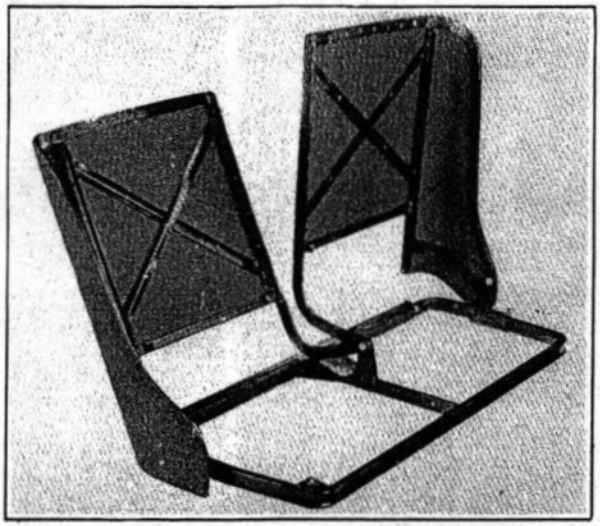
Take out four attaching screws, two at the front and two at the rear. Pull out cotter key in the adjusting rod at the bottom of the seat on the driver's side. To assemble, reverse the operation.



Front Seat Attachment

Front Seat Back (folding type)

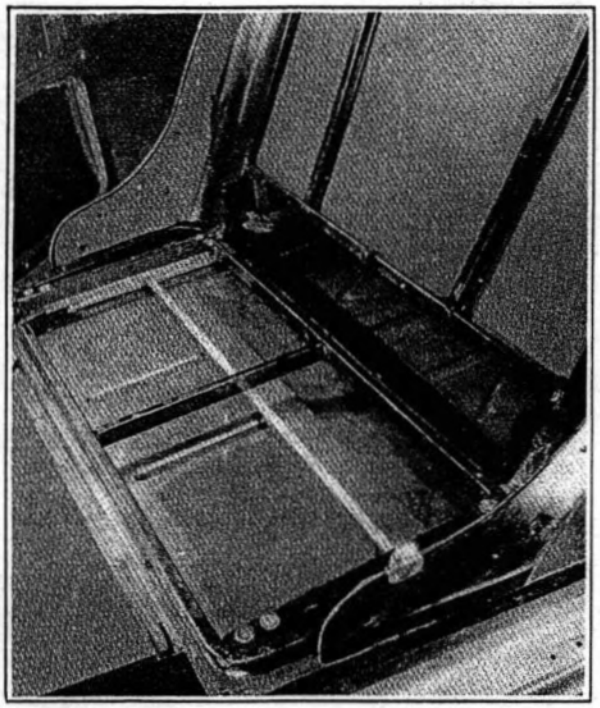
The front seat back folding type is also constructed of steel with two hinged back sections, each part is trimmed separately. Spacers may be attached to the bottom frame under the hinge to prevent chafing, should the seats become tight at the center.



Front Seat Back—Folding Type

To Change Inclination of Seat Back

Make a wedge shaped piece of wood and fasten to wood member of seat bottom with nails or screws. A piece $\frac{9}{16}$ x 1″ wide tapered to zero at the front will change the angle 1″ forward at the top. If a greater amount is desired the shim would be increased proportionately. In either case a longer bolt will be required at the rear attaching point. It will also be necessary to shim up the front of the cushion to obtain a proper angle for riding comfort.



Front Seat Sliding Mechanism

The front seat sliding unit is composed of an upper and lower member which should not be taken apart for service adjustments.

Adjusting for Rattles or Excess Shake

1. See that the bolts are tight which retain the sliding unit to the body sills. Tighten the bolts which retain the seat to the sliding unit. If it is still found to rattle it may be due to excess play between the upper and lower halves of the sliding mechanism.

Correction

1. Remove seat.
2. Bend the flanged lip of the upper half where it hooks onto the lower half using a pair of heavy pliers. Do this at the ends only.

Failure of Stops to Register on Either Side

This may be corrected by removing cotter key and elongating the hole in the connecting link on the driver's side.

This may be done by removing cushion only.

The sliding unit should not require lubrication over a long period of time. However, it may be lubricated by sliding seat forward and forcing oil forward into the hollow section of the unit.

Rear Seat Cushions

Assembling rear seat cushions:

1. Insert cushion. Place the hands along the bottom and push toward rear until the hooks in cushion drop in back of heel panel flange.

2. Push cushion downward at the front.

NOTE—If the cushion should jump out, remove the cushion and bend the hooks forward at the bottom in the form of a hook. This may be done by gripping the hooks with a pair of heavy pliers and bending forward about $\frac{3}{16}$".

The front seat cushion is assembled in a similar manner.

WINDSHIELD

Windshield Cleaners

Remove and replace cleaner motor.

Remove wiper blade and arm.

Remove nut on operating shaft.

Disconnect at the battery the hot wires to the ammeter and ignition switch.

Remove glove box.

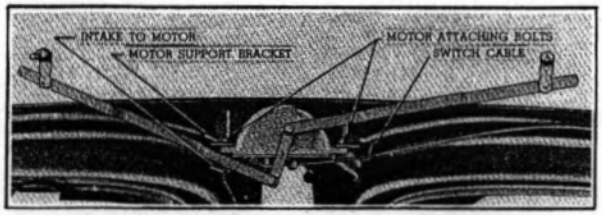
Remove nut holding wiper switch at lower left corner of instrument panel.

Remove rubber hose connection and two bolts retaining the wiper motor to the support bracket and remove the motor.

Reverse the operation to assemble.

To Equalize Parking Position of Wiper Arms

The motor support bracket is provided with elongated holes to permit a slight shifting of motor in either right or left direction by loosening two bolts. Move the motor to its proper location and tighten bolts.

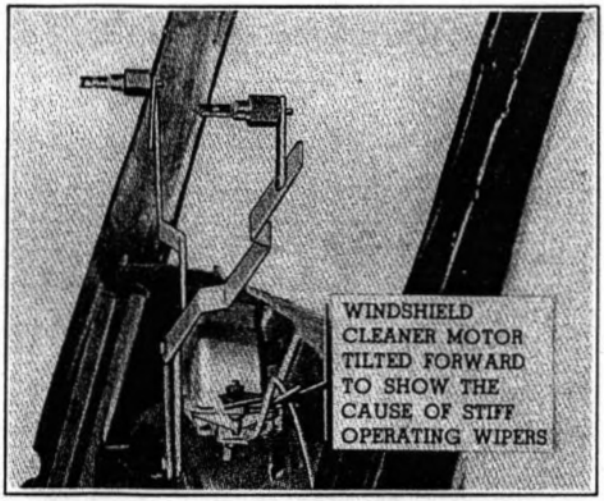


Windshield Cleaner Motor and Operating Mechanism

To Line-up Motor to Reduce Friction in Operating Arms

In the earlier cars the motor bracket was made of lighter gauge steel which distorted slightly when welding to instrument panel. This caused an out of line setting of the motor which increased friction in the joints of operating linkage.

To correct this, either shim up motor with thin paper board or if motor is removed, bend the bracket.

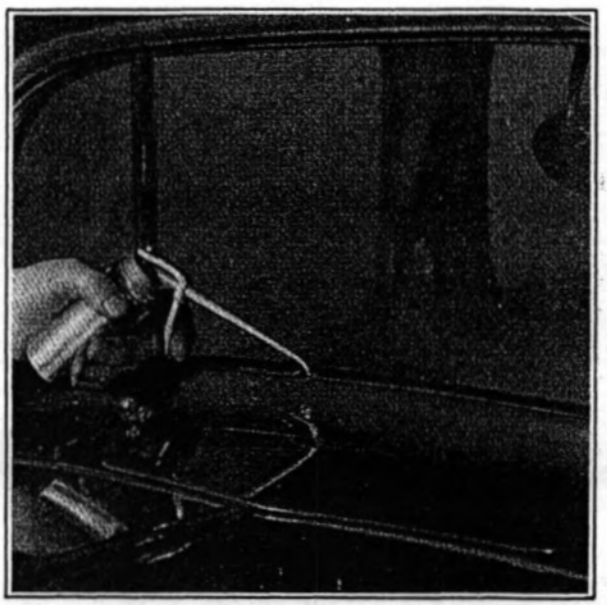


Windshield Leaks

It is not necessary to remove the complete windshield assembly to seal the rubber against leaks.

The One Twenty windshields are not sealed with cement or dumdum except for a space of about two inches in back of the windshield arm support where a slight depression in the metal requires a strip of dumdum. The shape of the lip which contacts the metal around the windshield frame is designed to be watertight due to extreme pressure when the windshield is properly set into the opening.

If a leak should occur use pressure gun ST968 with No. 45 Welt sealer cement applied under the outer lip of the rubber channel. This makes a secure seal against water.



Sealing Windshield Weather Strip to stop leak

Windshield Wiper Lubrication

Should the piston in the wiper motor become dry or sticky lubricate with Trico "Zero Mix Oil" by disconnecting tube at motor intake. Connect a short piece of rubber tube to motor intake, insert the end of this tube in a small container of oil, rotate motor blade several times by hand, thus drawing the oil into the motor.

NOTE—A felt gasket soaked in heavy oil is used at the base of the operating shaft which contacts the cowl panel to prevent leaks. Be sure this is properly located before reassembling motor.

Replacing a Windshield

Remove windshield wiper blades and arms.

Remove rear vision mirror.

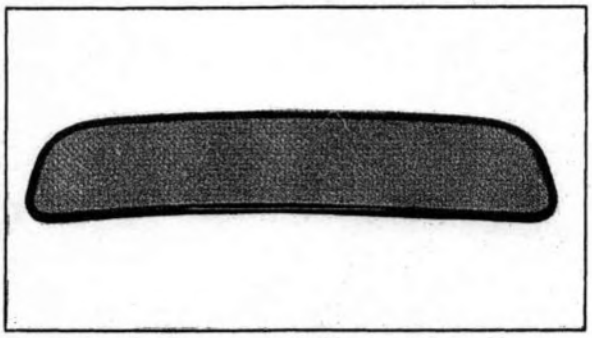
Remove windshield garnish moulding by taking out fourteen screws.

Remove windshield glass and rubber assembly.

NOTE—This requires one man inside the car to take the glass while the second man forces the assembly inward with his hands from the outside.

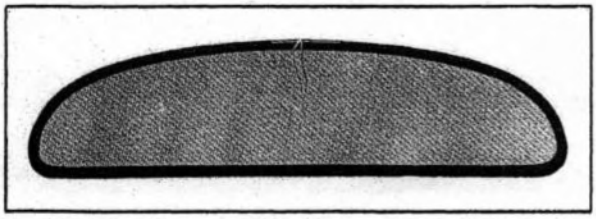
Reassembling

Clean off the panel recess removing dumdum, and any dirt or other obstructive material. Apply one coat of black brushing lacquer around the recess. Apply a thin layer of dumdum in back of the wiper arm supports.



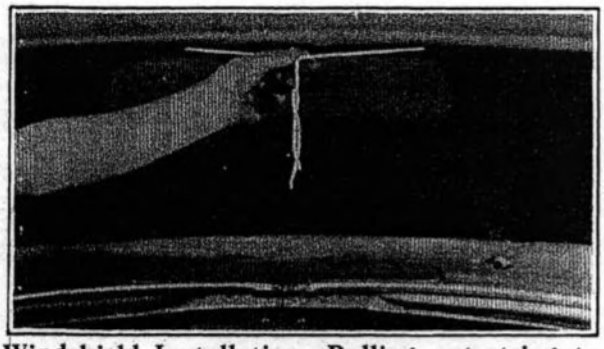
Windshield Glass and Rubber with pull string in groove ready to assemble

Assemble a new rubber to the new glass if the one removed has been damaged. The use of cement between the groove in the rubber and glass is not necessary. Place a piece of strong white cotton cord in the groove on the outside of the rubber. Tie ends in a double knot in the center at the top. Allow several inches of the ends to project outside the rubber. The cord is used for the purpose of pulling out the lip when assembling glass. Apply a coat of thin soft soap reduced about one part soft soap and four parts water to the front face of the rubber. Then immediately assemble the glass to the body, pushing it forward with the hands and while so doing the second man should pull on the string gently forcing out the lip.



Back Light Glass and Rubber with Pull String in groove ready to assemble

Assemble the garnish moulding, forcing it against the rubber by the use of a round pointed tool inserted into screw hole and prying forward. The screw adjacent should then be driven into the moulding. Follow this procedure all around. The garnish moulding screws are set at an angle which pulls the moulding toward the rubber channel when tightened. Use a soft wood block and hammer. Tap the garnish moulding after the screws are tightened, and repeat the operation if necessary. Exercise care in driving screws to avoid a depression under screw heads.



Windshield Installation—Pulling out string to Seal Lip of Weatherstrip

NOTE—The back window is assembled in the same manner.

BODY DOORS

Unlike the door of the Packard senior line which has an inner frame constructed of wood which is entirely covered with steel, the One Twenty door is made entirely of steel, which consists of an inner and outer panel welded into a solid unit.

The hinge pillars are reinforced with heavy gauge steel.

The front door lower hinge leaf and the two rear door hinge leafs are riveted solidly to the door.

The body half of the hinge is attached with machine screws.

Remove Front Door without Detaching Upper Hinge at the Body

1. Remove four machine screws which fasten upper hinge to the door.
2. Remove three machine screws in lower hinge. Remove door.
   Reverse the operations to assemble.

Remove Rear Door

1. Remove door check stop by loosening quarter trim panel at the pillar.
2. Pull cotter key at inner end of door check and remove bumper.
3. Remove four screws in upper hinge, and remove four screws in lower hinge.
4. Remove door by pulling outward.

   Reverse the operations to assemble.

Replacing Broken Door Hinges

Rear Door—Body Half

1. The body half may be replaced by driving out hinge pin and removing four screws.

   Use hinge pin puller ST-5068.

Rear Door—Door Half

1. Remove door.
2. Remove garnish moulding.
3. Remove door glass.
4. Remove window runway channels.
5. Remove door hardware.
6. Remove door trim panel.
7. Drill out rivets.

Upper Hinge

It will be impossible to replace the two outer rivets. Use No. 0312858 tapping plate and two door hinge screws No. 5701. Bend gusset plate

outward to provide space to insert tapping plate. Assemble two screws. Use rivet No. 5713 to attach hinge at the inside.

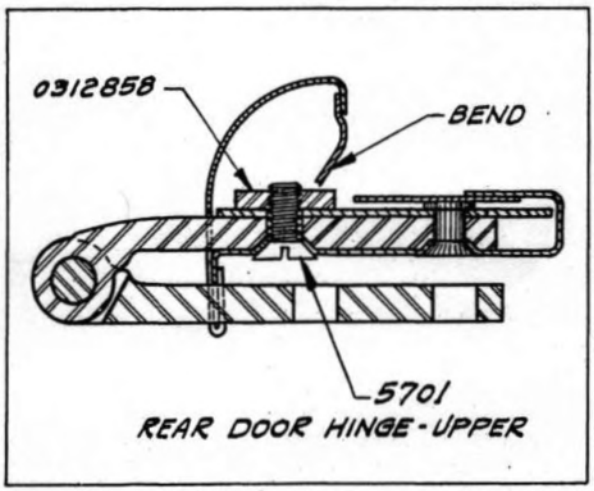
Lower Hinge

Drill out rivets, insert new hinge and attach with ¼" rivets No. 5713.

Insert rivets from the inside and rivet the outside using special tool No. ST5081.

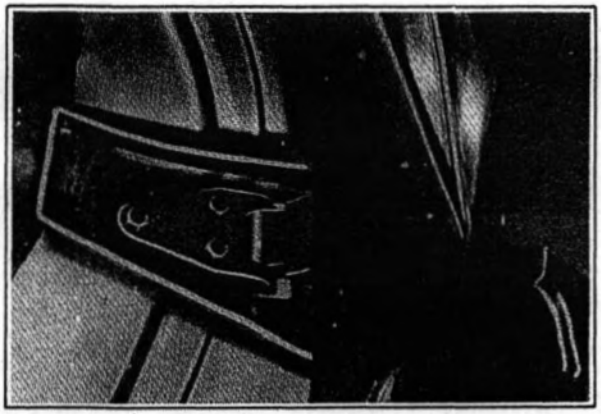
Front Door Lower Hinge

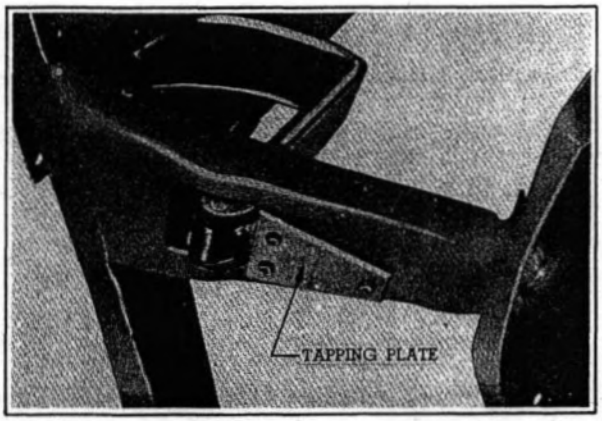
The lower hinge may be riveted in the same manner as the rear door lower hinge.



Oiling Hinges

To oil hinges open the door and insert oil in a small counterbore at the top joint of hinge. Work door back and forth until doors operate freely.

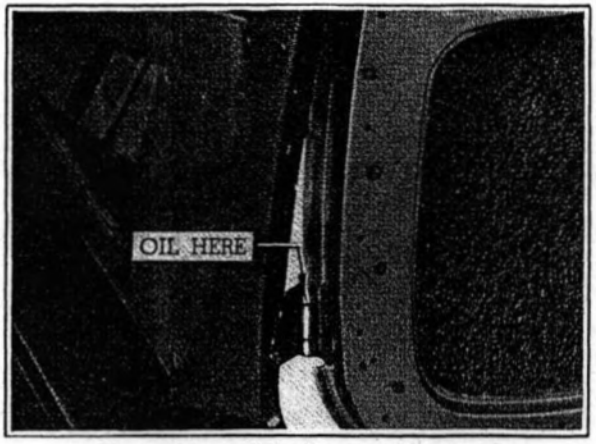




Front Door Hinge Upper

This hinge is the concealed type which is designed to swing the door outward and forward to provide greater entrance room and to retain as nearly as possible the original shape of the door.

The hinge is composed of two forged leaves. The leaf attached to the door is in the form of a hook and swings through an opening in the instrument panel. The inner end of the hook leaf is pivoted to the other leaf which is bolted to the pillar-to-dash brace by means of a tapping plate which is located on the outside face of the brace.



Front Door Hinging and Oiling

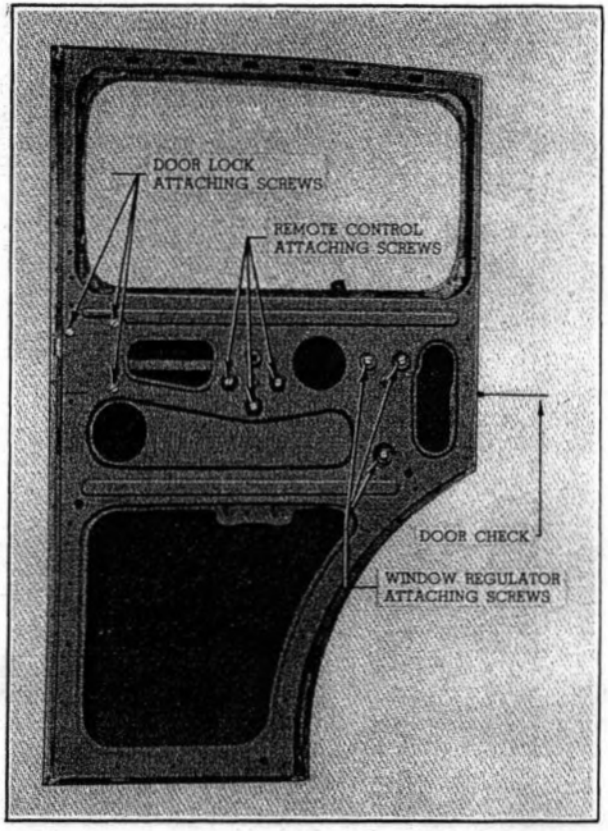
The bolts extending through slots in the brace allow adjustment of the hinge leaf so that the door may be aligned accurately in the body opening. For the purpose of oiling, a small counterbore is located at the top of hinge joint (see cut).

Removing Front Door

1. Remove wind hose support plate by removing three screws.
2. Remove three screws in lower hinge.
3. Remove three bolts in inner leaf of upper hinge. Hold the tapping plate to avoid dropping down between the opening of toe board bracket and cowl panel. The upper hinge assembly will pass through the opening in the instrument board.

Removing Window Regulators (Front Doors)

1. Remove garnish moulding.
2. Remove door hardware.
3. Remove door trim panel.
4. Remove ventilating window.
5. Remove door glass.
6. Remove door glass runway channels.
7. Remove three screws in window regulator.
8. Remove regulator through the opening at the top front of door. Reverse the operations to assemble.



Removing Door Trim Panel

The door trim panel is made up completely as a unit with all fasteners in place ready to attach.

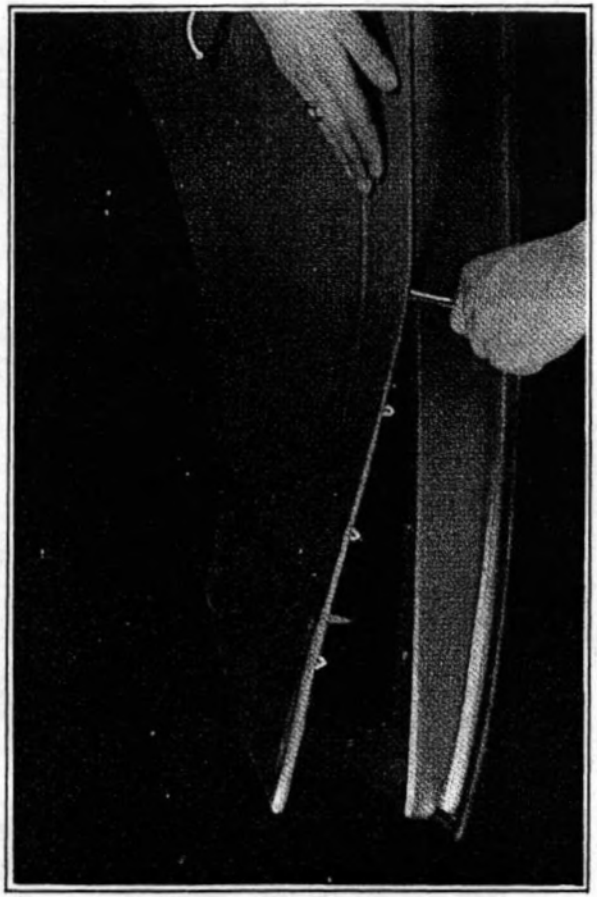
Remove garnish moulding.

Remove interior hardware.

Insert a screw driver between door panel and trim panel.

Locate the screw driver as close to the snap fasteners as possible. Give the handle a twist which will release the fastener. Continue this all around the door except at the top which is held in place with the garnish moulding. It is not absolutely necessary to remove the garnish moulding to remove the door trim panel.

The same procedure is used on the front door except the addition of two fasteners in the cross member in the middle of the door. To replace panel, locate the fasteners opposite the holes in the door. Start fasteners with the hands and true up with a wood block and hammer.

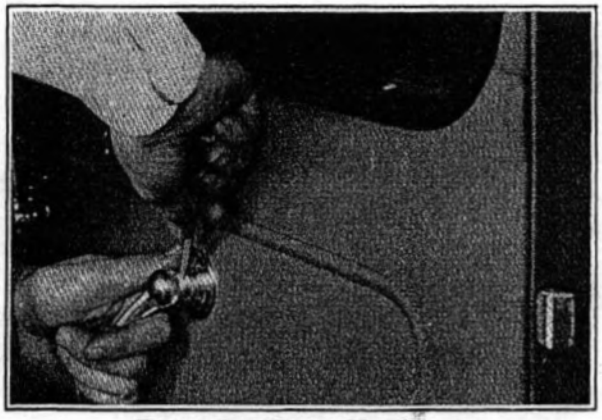


Removing Door Trim Panel

Removing Door Hardware

Press the handle escutcheon plate toward the trim panel with the thumb.

Push out locking pin with an awl.



Removing Door Hardware

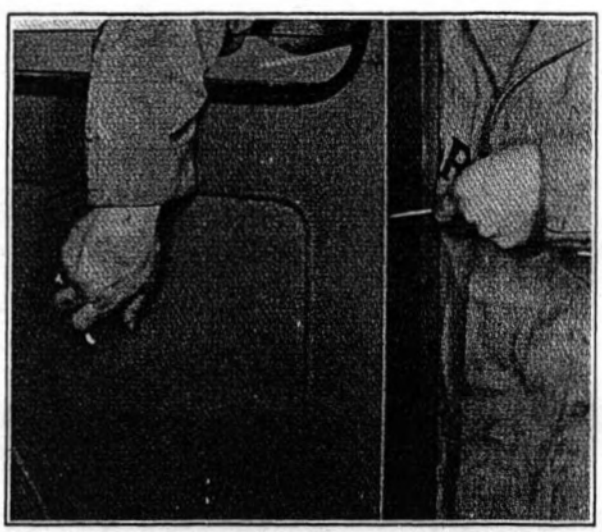
When replacing panels be sure to replace coil springs in their proper place on the shank and underneath the trim panel.

Removing Outside Door Handles

1. Remove two screws from escutcheon plate.
2. Turn handle all the way down the same as when opening door.
3. Hold the handle in this position and pull outward.

To Reassemble

1. Insert outside door handle in hole in the door and engage end of handle shank in first square hole in lock.
2. Take hold of remote control handle and retract the door lock bolt (same as opening the door from the inside). Hold remote control handle down.

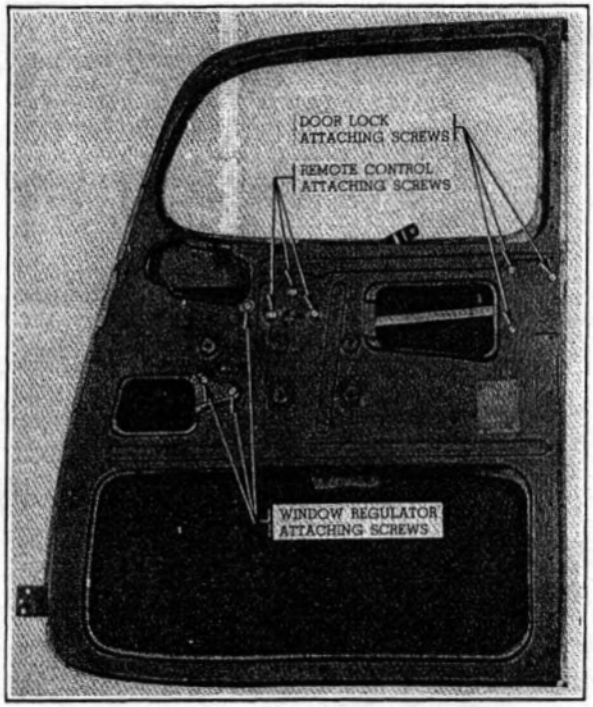


Assemble Outside Door Handle—Pushing Back Cam to Line up Broaches inside of lock

3. Insert an awl or the square end of a small file in the small hole directly under the lock bolt on the face of the door pillar.
4. Push inward, which will align both square holes.
5. Tap the handle with the hand to drive it home.
6. Assemble two screws through the escutcheon plate.

Remove Remote Control and Door Lock Assembly

1. Remove garnish moulding.
2. Remove door hardware.
3. Remove outside door handle.
4. Loosen door trim panel about one-half way down from the top.
5. Cover inside of door glass with heavy paper fastened with adhesive tape.
6. Raise glass to closed position.
7. Remove three screws in door lock.
8. Remove three screws in remote control.
9. Drop lock downward and turn to right to disengage remote control link.



5-Passenger Sedan Front Door in White

10. Remove lock.

11. Lower glass to full open position.

12. Push remote control unit inward and upward through opening at top of door. Reverse the operations to assemble.

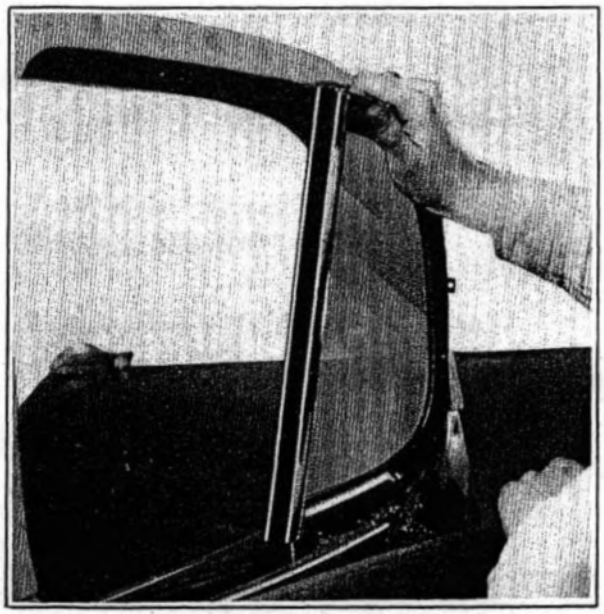
NOTE—The same method may be used on the rear door.

Removing Front Door Ventilating Windows

The ventilating window may be removed without disturbing the sliding glass.

1. Crank the front door window down as far as possible. Remove the garnish moulding and ventilating window operating handle. Release door trim panel about 12″ down at the top front corner.

2. Remove three screws which hold the ventilating window. Be sure to retain the cardboard shims which are used under the attaching lugs to permit reassembling of the window in the original place.



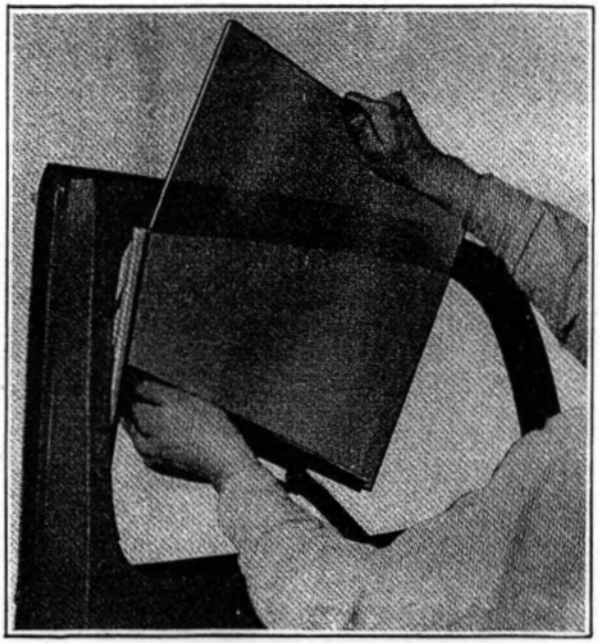
3. Tilt the window inward at the top sufficiently to allow the window to clear the door header trim. Lift the window upward, with the channel attached. In reassembling reverse the operations.

NOTE—In replacing a broken glass it is advisable to order a ventilating window assembly which consists of the glass assembled into the frame.

Removing the Rear Glass in the Front Door

1. Remove the ventilating window. Follow instructions as stated above.

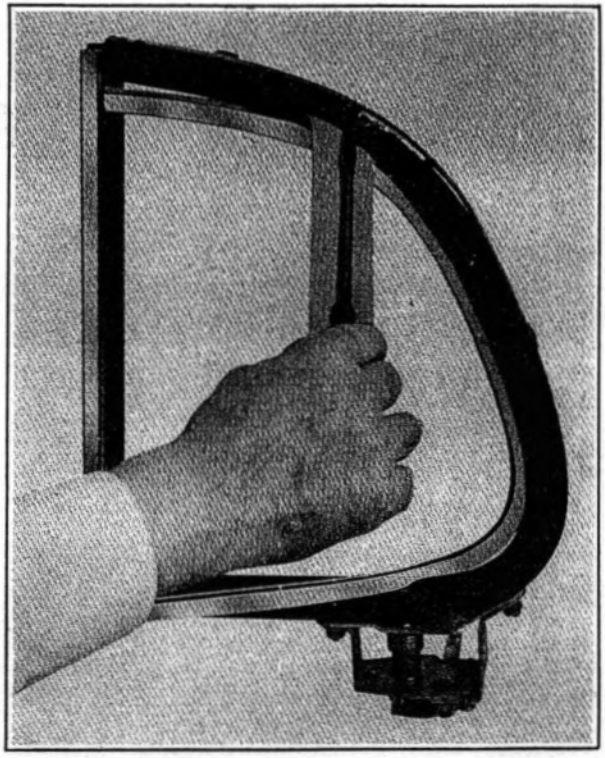
2. Lower glass as far as possible. Remove the retaining screw at the top of the window runway channel. Pull channel out at the top to permit the glass to clear the door header trim.



Removing Front Door Glass

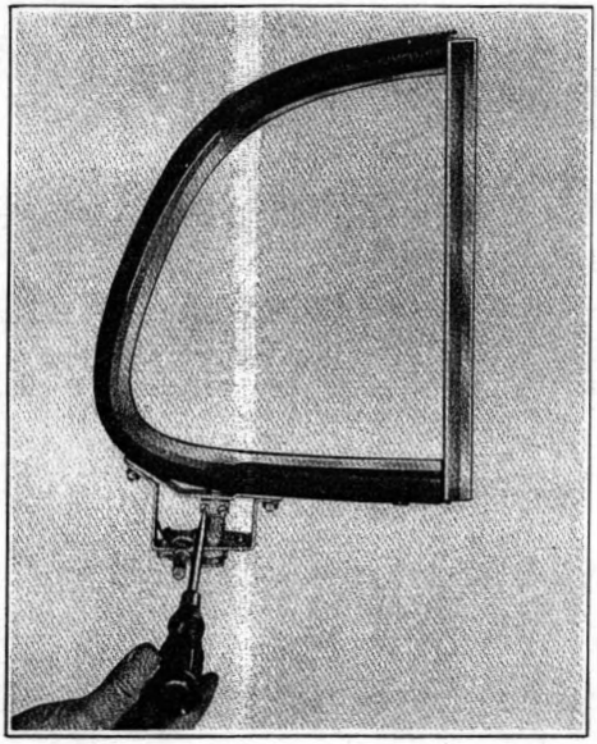
3. Crank the glass upward until the regulator arm is well above the door reveal. Slide the glass backward until lifter roller is in line with entrance hole in lifter channel. Then remove glass. Reverse the operations to reassemble.

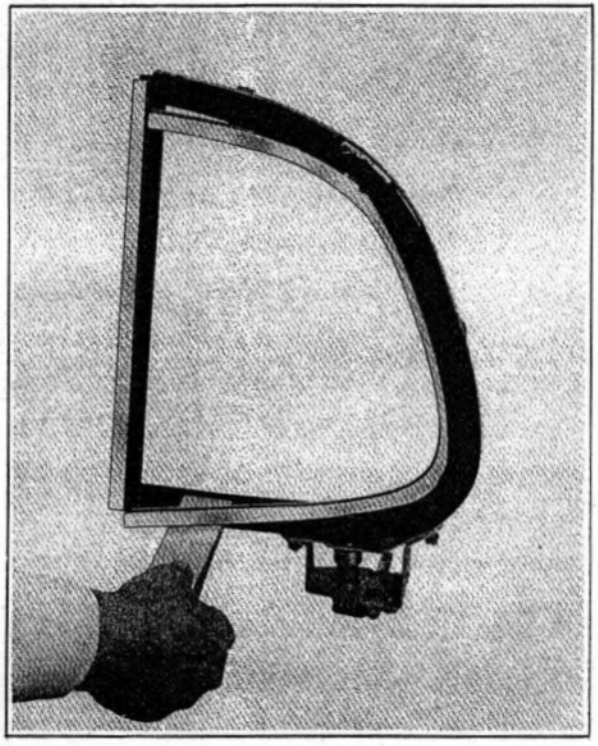
Adjusting Front Door Ventilator Window to Eliminate Leaks



Leaks may be due to misalignment with rubber seal. (1) Does not seal at the top. Remove garnish moulding. Tighten two adjusting screws in operating unit. Open window about 2″. Insert a piece of aluminum about $\frac{1}{16}$″ thick and $1\frac{1}{2}$″ wide between glass frame and rubber. Use a medium size screw driver as a pry bar and pry frame inward slightly. This will distort hinge pin at top and close up the joint.

NOTE—This operation will require extreme care to avoid breaking the glass. To equalize opening

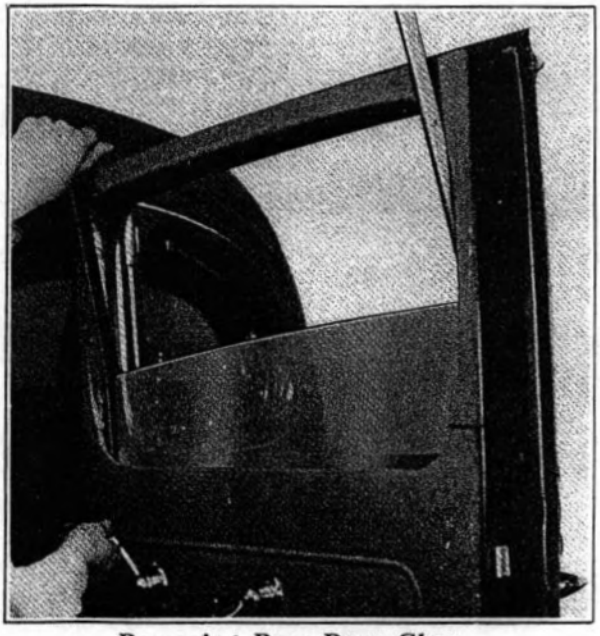




around frame and rubber, loosen adjusting screws and pry glass frame in the desired direction with a tapered wood block. Then tighten adjusting screws.

Remove Rear Door Glass

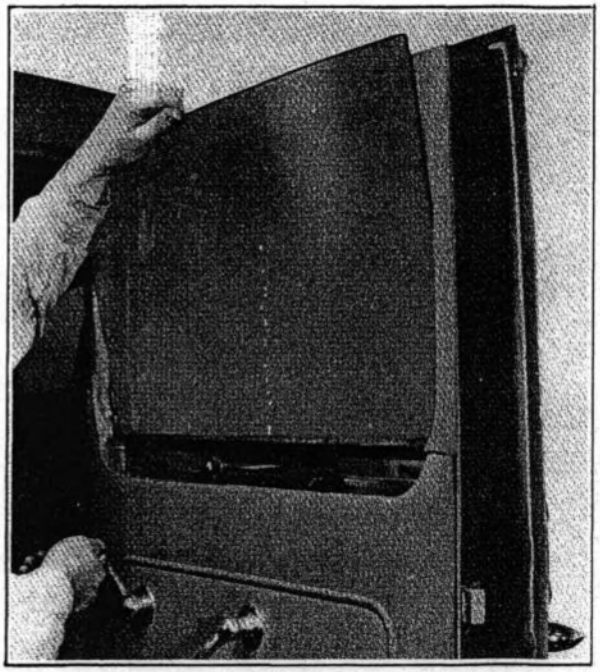
Remove garnish moulding. Lower glass to full open position. Remove two screws in the top of window glass channels which are imbedded in the fabric. Remove the channels by pulling the channels inward at the top and cranking the



Removing Rear Door Glass

window upward. When the glass is about one-half up, pull out the channels. Raise the glass upward until the regulator arm is well above the door reveal. Slide the glass in the lifter channel until the roller is in line with entrance hole. Then remove the glass.

Reverse the operations to reassemble.

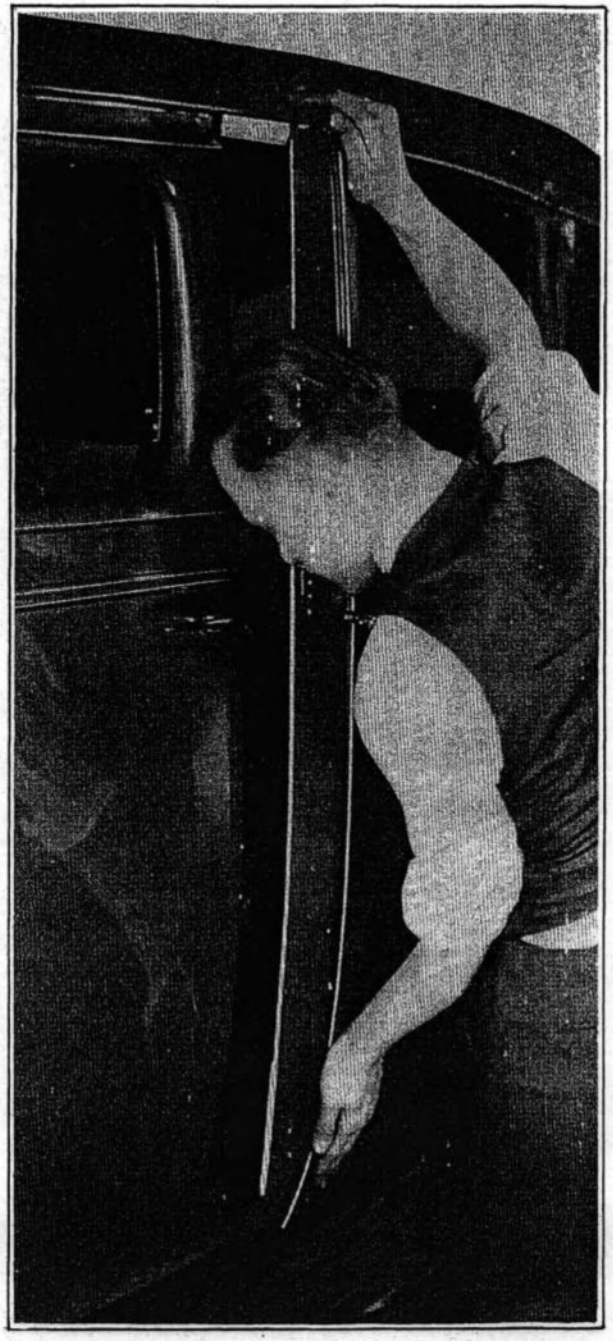


Assembling Rear Door Glass

Door Header Wedge Plates

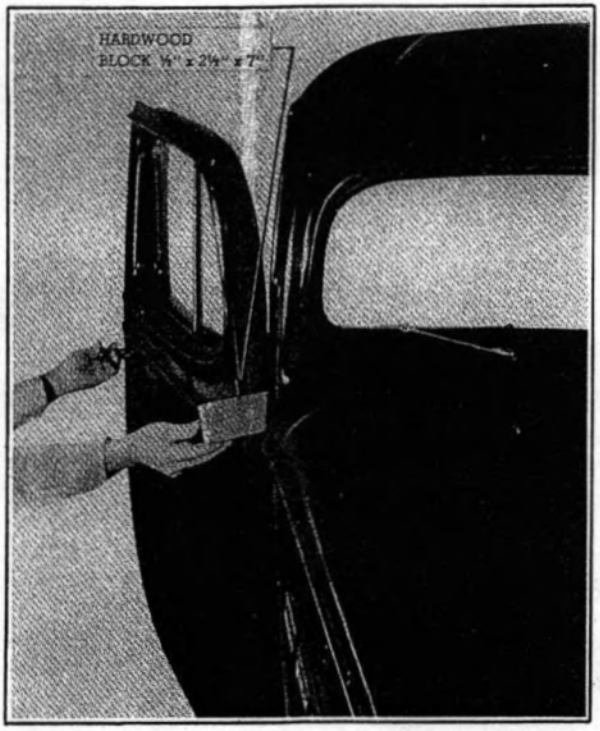
Wedge plates are attached to the roof rail with two wood screws which pass through the header face plates. The tapered slide plate is made of Oilite metal which is self-lubricating. However, if the plate becomes tight a few drops of light oil applied to the exposed face will assist in freeing it up. Should the plate become loose and rattle through wear the whole unit should be removed by first removing the header panels. Clamp the case in a vise and force the guides inward against the sides of the plate by tapping lightly on a blunt chisel. Approximately .003 clearance will be sufficient.

Door Alignment



Forcing Door Inward at Bottom to correct misalignment

For an out at the top condition use the block at the bottom and force the door in at the top.

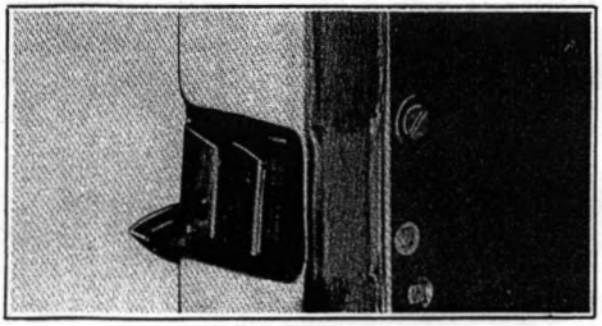


If door hinge is bent with undue force when opening the door, it can be adjusted to normal position by inserting a block of hardwood as shown and forcing door in the direction of arrow.

If the doors do not line up properly one with the other, being out at the bottom or out at the top, they may be sprung in shape. If out at the bottom, place a block of wood between roof rail and door top and force it inward at the bottom.

Door Lock Strikers

The door lock strikers are attached to the center pillar with filister head machine screws which enter a sliding tapping plate which permits an adjustment of $\frac{3}{16}$" inward when the striker is



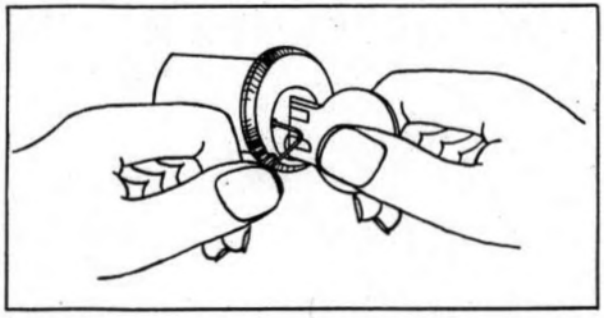
Door Lock Striker

flush with the outside of the pillar. In many cases the fitting of the doors at the center pillar may be quickly adjusted by resetting the strikers and regulating the door bumpers.

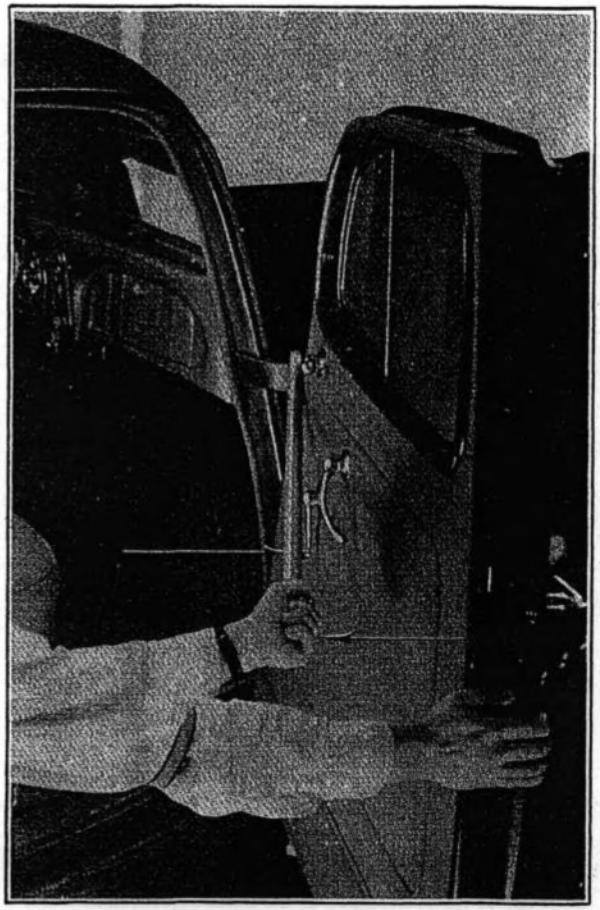
Front Door Key Lock and Tire Compartment Door Lock

Remove key lock cylinder:

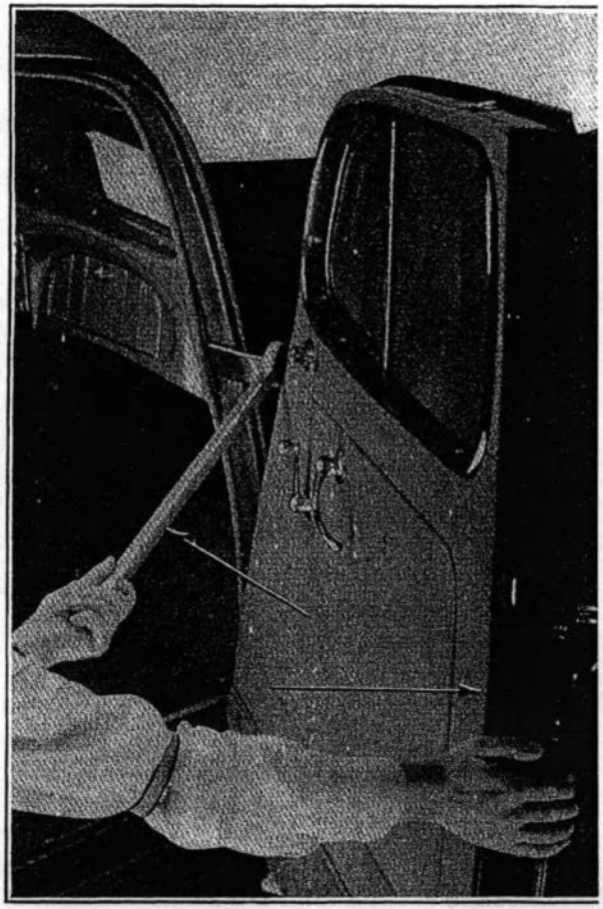
1. Insert key.
2. Turn key to left.



3. Insert a sharp pointed tool in the small hole in cylinder to depress retaining spring.
4. Turn left and pull out cylinder with key.



Adjustment to obtain more clearance between door and body pillar. Apply force in direction of arrows.



Adjustment to obtain less clearance between door and body pillar. Apply force in direction of arrows. Use ST5080

Trunk Lid Lock

Remove key lock cylinder.

1. Remove retaining screw in hook catch inside of door.
2. Insert key in lock, turn left and pull out cylinder.

GLOVE COMPARTMENT DOOR

Removing Glove Compartment

Remove glove box.

Remove six Parker Kalon screws which retain the box to the flange.

Remove glove compartment door.

Drop the door to the full open position and remove two bolts which retain the hinges to the flange.

Adjusting Glove Compartment Door

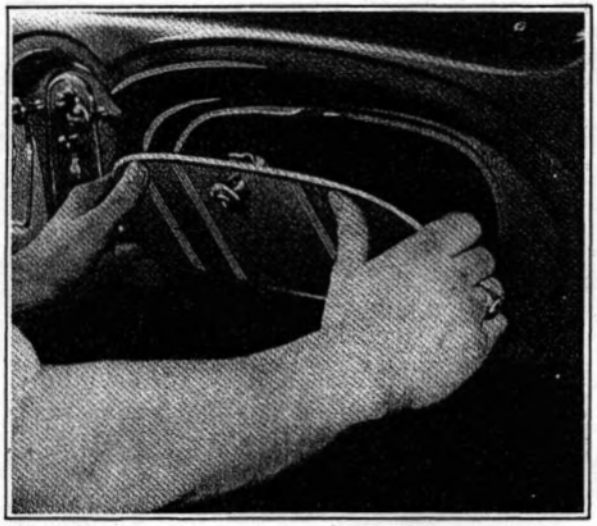
Sight the margin of opening around the door.

Drop door about half way back.

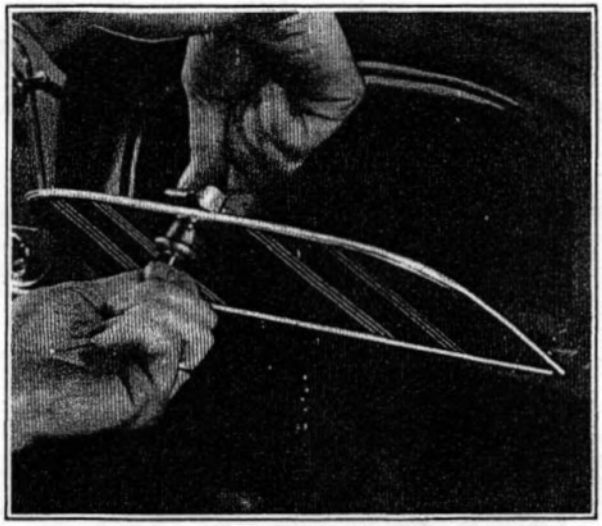
Press with the hands against the hinges in the desired direction.

To Remove Key Lock Cylinder

Insert key and turn to unlock position (as far as possible). Lift lower end of bolt at the same time turning key farther toward the unlock position. Pull out cylinder lock.



Refitting Glove Compartment Door



Glove Compartment—Removing Key Lock

Body Shimming

Tool No. 967 is designed to eliminate the use of a floor jack, pinch bar or wedges. It will greatly reduce the time of shimming without danger of damage to underneath parts of the car.

Fig. 1 Shows a body in perfect door alignment and is to be used as a standard of perfection with which other misaligned doors are to be compared. Due to the rigid construction of the One Twenty bodies and chassis frame and the large number of body bolts employed, except for accident the doors should remain in shape almost indefinitely.

There are three conditions of misalignment most likely to be met with in a body of this type.

No. 1. A B C
Open Close O.K.

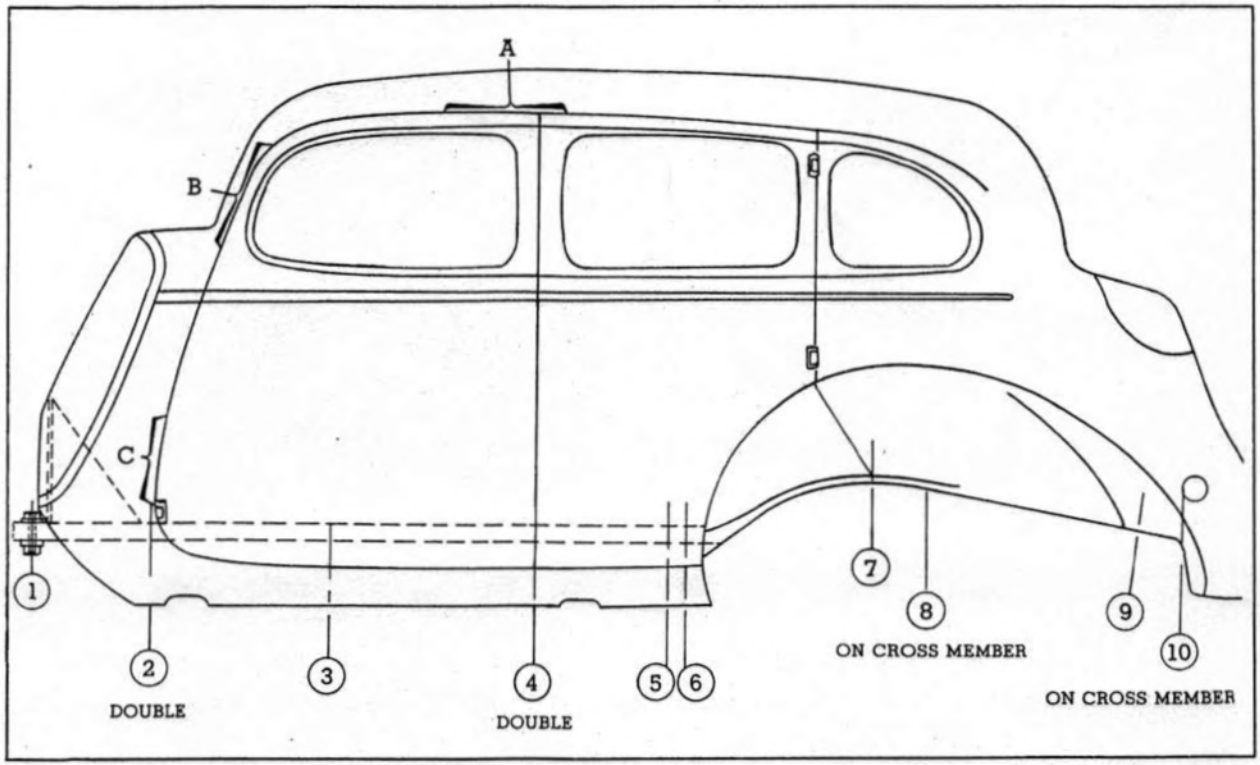
Correction: Loosen body bolts at 1 and 3. Loosen body bolts at 2 and insert steel shims. Tighten body bolts.

No. 2. A B C
Close Open O.K.

Correction: Add steel shim at bolt No. 1.

No. 3. A

Open at both front and rear doors otherwise normal.



Correction: Loosen bolts at 1, 2, 3, 4, 5, and 6. Insert shims at 1, 2, 3, 5, and 6. Tighten body bolts.

Special steel shims are provided in two thicknesses $\frac{1}{16}$" and $\frac{1}{8}$" which may be used singly or in multiple to meet any need in door alignment.

The part numbers are as follows:

308953 Body to frame liner shim—short $\frac{1}{8}$" thick.

308954 Body to frame liner shim—short $\frac{1}{16}$" thick.

308955 Body to frame liner shim—intermediate $\frac{1}{8}$" thick.

308956 Body to frame liner shim—intermediate $\frac{1}{16}$" thick.

308957 Body to frame liner shim—long $\frac{1}{8}$" thick.

308958 Body to frame liner shim—long $\frac{1}{16}$" thick.

The designated points to use the shims are as follows:

Numbers 308953 and 308954 at 1, 3, 5, 6, and 8.

Numbers 308955 and 308956 at 2 and 4 inside.

Numbers 308957 and 308958 at 2 and 4 outside.

NOTE—These shims are designed with slotted holes to easily insert on top of composition shims without removing the body bolts.

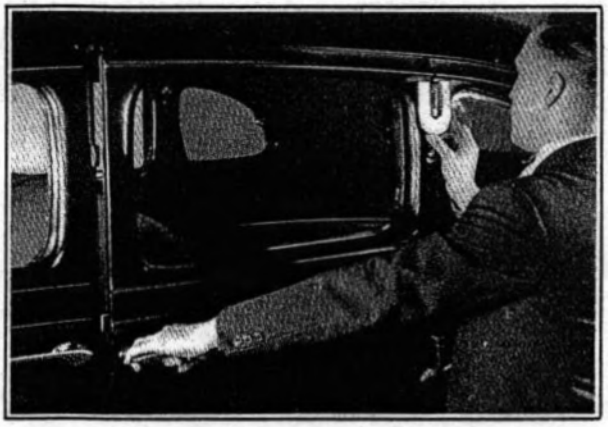
Body Mounting

The One Twenty bodies are mounted to the chassis with twenty-four body bolts. Body shims are made of a combination of fabric and rubber. $\frac{1}{4}$" shims are used at all points except No. 4 which has $\frac{3}{8}$" through the chassis frame and $\frac{1}{4}$" through the bracket outside the frame.

NOTE—Body is double bolted at points 2 and 4.

Doors

If the front doors do not fit properly some necessary adjustment can be made by loosening the three bolts in the upper hinge under the cowl, move door to desired position and tighten bolts.



In some cases it may be necessary to shim the body to obtain proper door alignment and this applies to the front doors only. If the rear doors do not fit properly, it will be necessary to bend the hinges with a tool as shown. A wide face monkey wrench will serve the purpose.

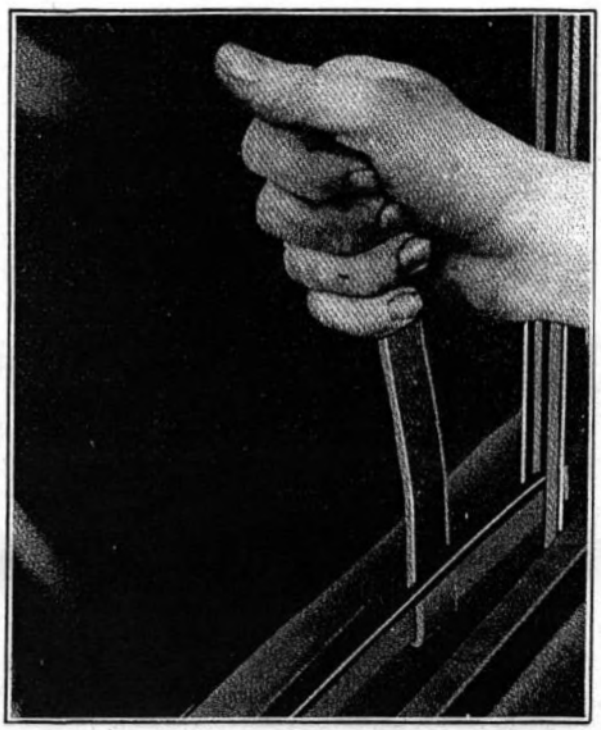
RAIN and DRAFT ELIMINATION

Sealing Windows

This condition can be remedied by making a few simple adjustments:

Check water drain holes in the bottom of doors, and where several are found, pack the lower channel with copper wool or a very coarse hair padding.

The up-and-down window channels are equipped with a rubber weatherstrip on the outside edge. This weatherstrip should contact the metal weatherstrip fastened to the door when the window is in fully raised position. If a correction is necessary, it should be made by bending the metal weatherstrip. To do this it is not necessary to disturb the door trim or glass. Make a 12″ bending tool from a piece of strap iron 1″ wide, ⅛″ thick. Put a 1″ lap bend on one end, leaving an opening about the thickness of the body metal. With the window in the lowest position, the tool can be inserted between the glass and the door and slipped over the ledge of the metal weatherstrip, which then can be bent and shaped as required. In a few cases you may find that the channel rubber weatherstrip is short, leaving an opening at the ends. To close the opening, cut a piece of sponge rubber of suitable thickness and length and cement it to the door metal in a position which will seal the opening.

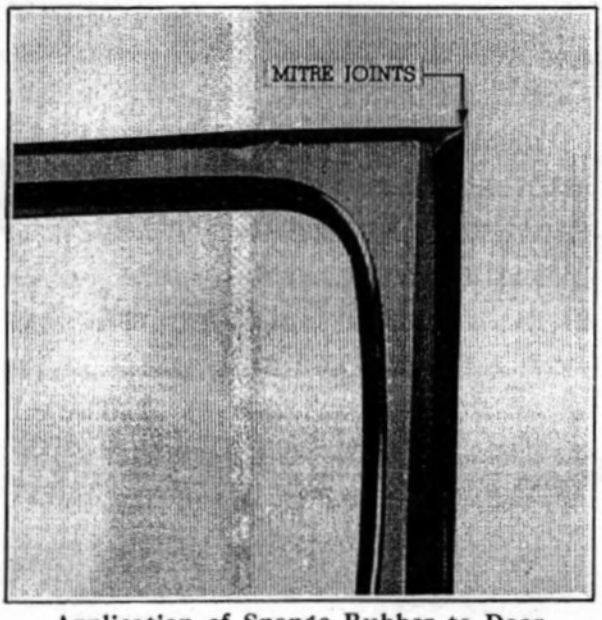


Sealing Door Joints

Leaks are usually caused by insufficient contact with wind hose. The recommended cure for this is to apply sponge rubber strips all around the door panel flanges.

The proper application of this is as follows:

Thoroughly clean the door flanges with gasoline. Apply one coat of No. 181 cement to the panel flange and one coat to the underside of the weatherstrip. When cement becomes tacky, apply the rubber to the door. Space the rubber about 1/16″ inside the edge of the door. All corners should be mitred and cemented. Rubber may be cut with sharp shears. A clearance cut should be made in the rubber at the boss around the



Application of Sponge Rubber to Door

door handle, and the door bumpers should be cut down flush with the pillar. Bumpers should be removed and finished smoothly with a grinding wheel.

Sealing Body for Road Dust

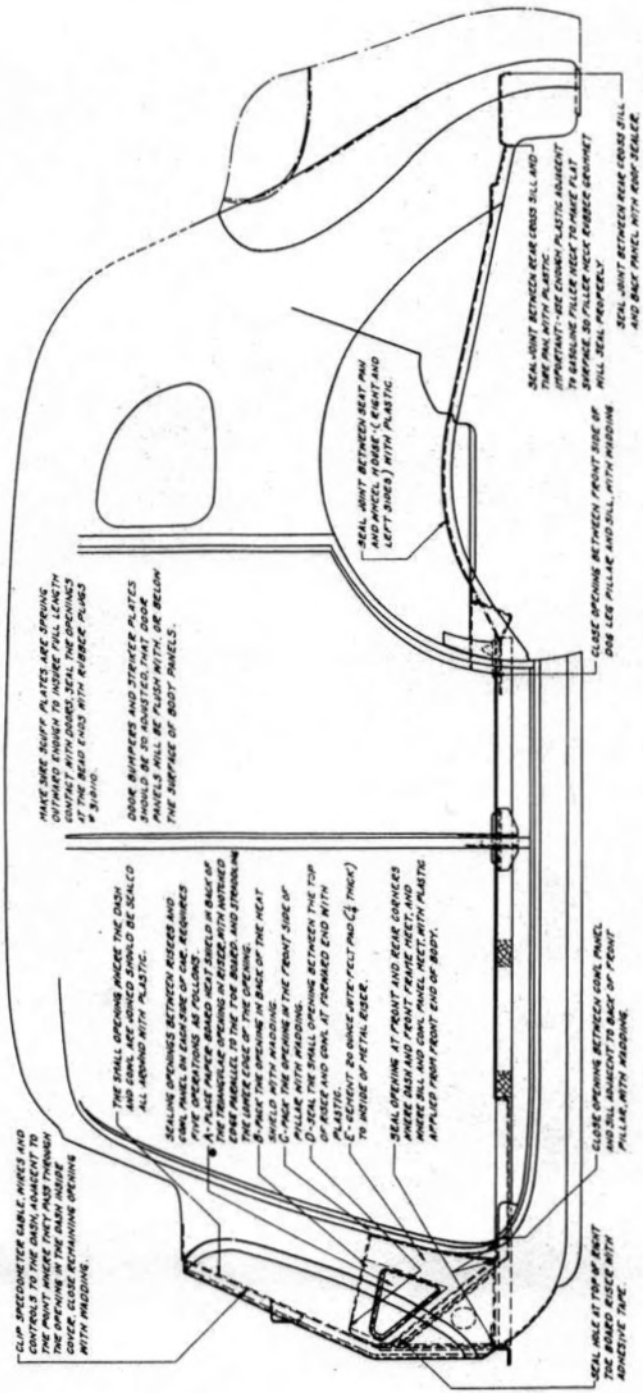
The problem of road dust entering the car, particularly in the rear compartment, is due to improper sealing.

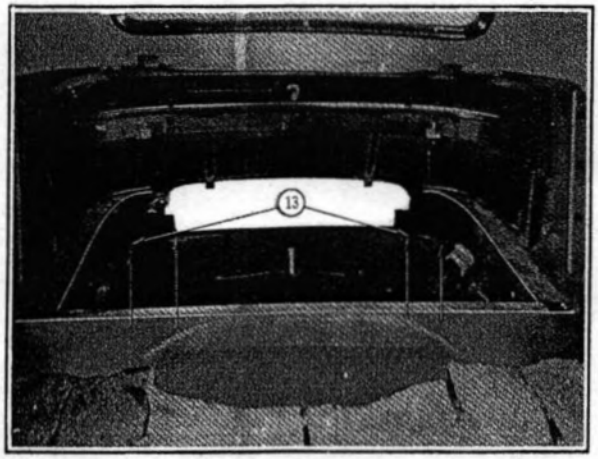
In the accompanying photographs are shown several points where dust is apt to enter the car.

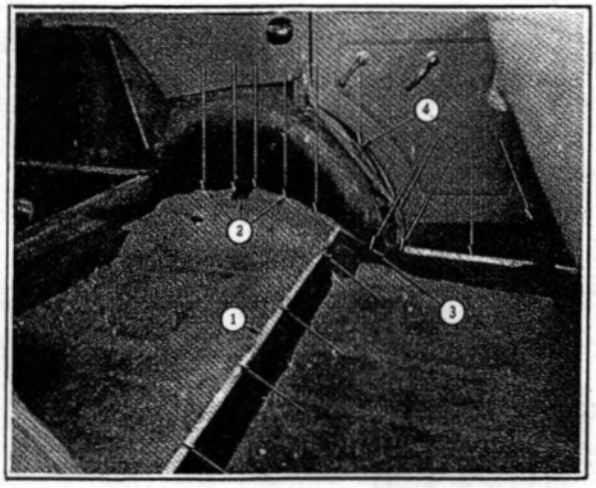
Most troubles were found on the Series One Twenty cars, and this condition is greatly improved in the B Series by the application of sealer cement in various joints in the metal and constant checking of all places where felt packing is used for sealing between body and chassis.

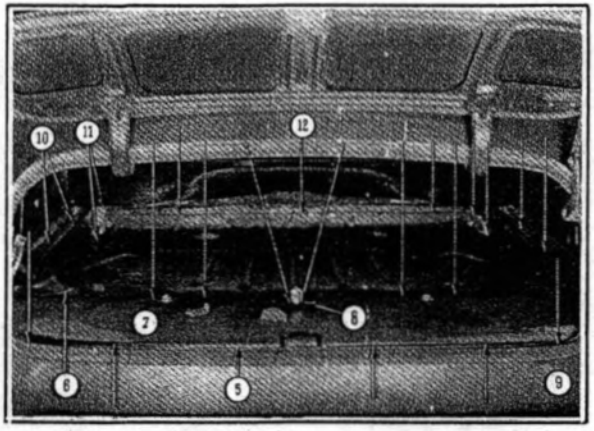
Correction

1. Top of rear seat heel panel. Cover the spot welded joint with friction tape.
2. Fill the joint of rear seat floor pan and wheel house panel with sealer cement.
3. Calk the joint under dog leg bracket with cotton or dumdum.
4. Door joint. This should be corrected by applying sponge rubber strips on the door flanges.
5. Fill joint with sealer cement.
6. Gasoline tank filler tube gasket. Seal to panel with No. 7 cement.
7. Calk joint with sealer cement.
8. Calk opening around tire bracket bolt with cotton wadding and cement.
9. Calk joint of rear sill panel and body panel with cotton wadding and cement.
10. Calk opening around body bolt bracket with cotton wadding and cement.
11. Cover small holes in corners with friction tape.
12. Calk joint with cotton wadding and cement.
13. Calk with cotton wadding and cement.


CLIP, SPEEDOMETER CABLE, WIRES AND CONTROLS TO THE DASH, LOCATED AT THE POINT WHERE THEY PASS THROUGH THE OPENING IN THE DASH INSIDE COVER. CLOSE REMAINING OPENING WITH MOLDING.
THE SMALL OPENING WHERE THE DASH AND COWL ARE JOINED SHOULD BE SEALED ALL AROUND WITH PLASTIC.
SEALING OPENINGS BETWEEN RISERS AND COWL PANEL ON EACH SIDE OF CAR, REQUIRES FIVE OPERATIONS AS FOLLOWS:
A-PLACE PAPER BOARD HEAT SHIELD IN BACK OF THE TRIANGULAR OPENING IN RISER, WITH NOTCHED CORE PARALLEL TO THE FOR BOARD, AND STRADDLING THE LOWER EDGE OF THE OPENING.
B-PACK THE OPENING IN BACK OF THE HEAT SHIELD WITH FELT PADDING.
C-FILL THE OPENING IN THE FRONT SIDE OF PILLAR WITH PADDING.
D-SEAL THE SMALL OPENING BETWEEN THE TOP OF RISER AND COWL AT FORWARD END WITH PLASTIC.
E-REHEAT 80 GUAGE ARTE-FELT PAD (¼ THICK) TO INSIDE OF METAL RISER.
SEAL OPENING AT FRONT AND REAR CORNERS WHERE DASH AND FRONT FRAME HEET, AND WHERE SILL AND COWL PANEL MEET, WITH PLASTIC APPLIED FROM FRONT END OF BODY.
SEAL HOLE AT TOP OF RIGHT TOE BOARD WITH ADHESIVE TAPE.
CLOSE OPENING BETWEEN COWL PANEL AND SILL ADJACENT TO BACK OF FRONT PILLAR, WITH PADDING
MAKE SURE SCUFF PLATES ARE SPRUNG OUTWARD ENOUGH TO INSURE FULL LENGTH CONTACT WITH DOORS. SEAL THE OPENINGS AT THE BEAD ENDS WITH RUBBER PLUGS # 3,4,AND 5.
DOOR BUMPERS AND STRIKER PLATES SHOULD BE SO ADJUSTED, THAT DOOR PANELS WILL BE FLUSH WITH, OR BELOW THE SURFACE OF BODY PANELS.
SEAL JOINT BETWEEN SEAT PAN AND ANGEL (ONE (RIGHT AND LEFT SIDES) WITH PLASTIC
CLOSE OPENING BETWEEN FRONT SIDE OF DOR LEG PILLAR AND SILL, WITH PADDING
SEAL JOINT BETWEEN REAR CROSS SILL AND TIRE PAN WITH PLASTIC.
IMPORTANT:-USE CHUNK PLASTIC ADJACENT TO GASOLINE FILLER NECK TO MAKE FLAT SURFACE, SO FILLER NECK RUBBER GROMMET WILL SEAL PROPERLY
SEAL JOINT BETWEEN REAR CROSS SILL AND BACK PANEL WITH ROOF SEALER.



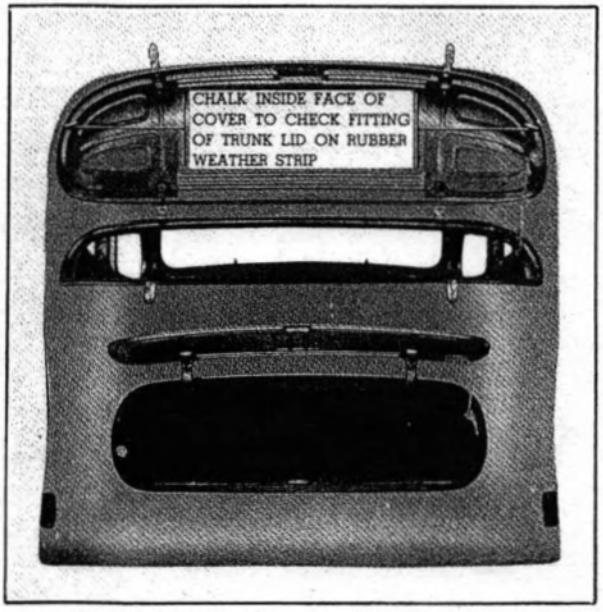




When sealing, check points indicated

Trunk Lid Leaks

Trunk lid leaks may be found and corrected by chalking the face of the door which contacts the rubber. Close the lid tightly. Wherever the chalk does not leave an imprint on the rubber is probably where the leak occurs.



Rear View of Body showing details of trunk lid tire door and weatherstrip

Correction

Peen up the metal which retains the weatherstrip at each point that shows a low spot.

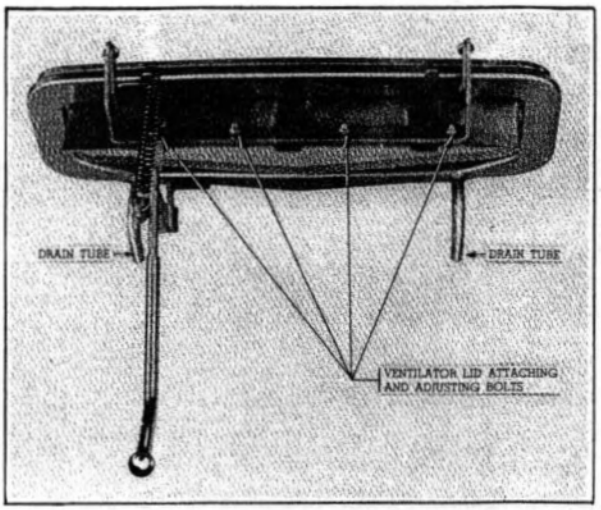
In some cases it may be necessary to remove the rubber and re-cement it. In this case a thin shim of cardboard may be cemented in the metal groove before replacing the rubber.

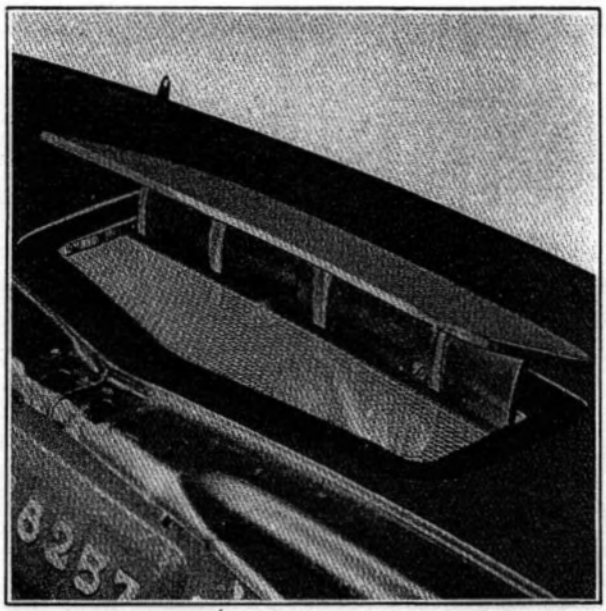
Cowl Ventilator Leaks

The cowl ventilator unit assembly is spot welded to the cowl panel. The stamped groove forms the weatherstrip retainer. The drain trough is contained within the ventilator unit and is watertight. It is provided with two drain tubes which are joined to rubber hoses which extend through the outer face of the dash panel. The cover, which is detachable, is bolted to the ventilator bracket through oversize holes which permit of 1/8" horizontal adjustment and 1/8" vertical.

Correction

To provide a tight seal against leaks loosen the four nuts, place a reasonably heavy weight on top of the cover with a piece of fabric or other protective material under the weight to prevent marring the paint, then tighten the nuts. Be sure the weight on the cover is equally distributed.



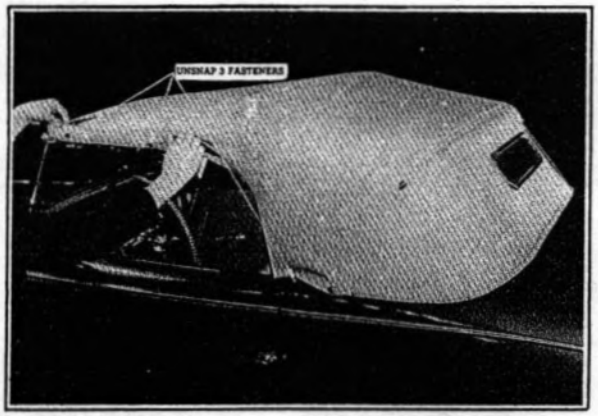


Cowl Ventilator Assembly

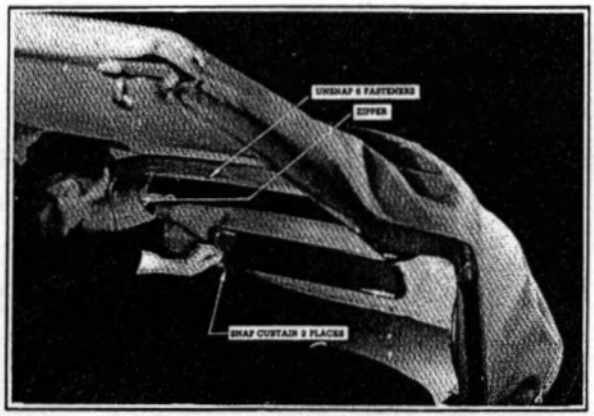
CONVERTIBLE COUPE TOP RAISING AND LOWERING

Observance of these instructions will eliminate likelihood of damage to the top material and facilitate the operations. . . . It is essential that the operations be performed in their proper sequence.

Operation 1. Lower all door windows.



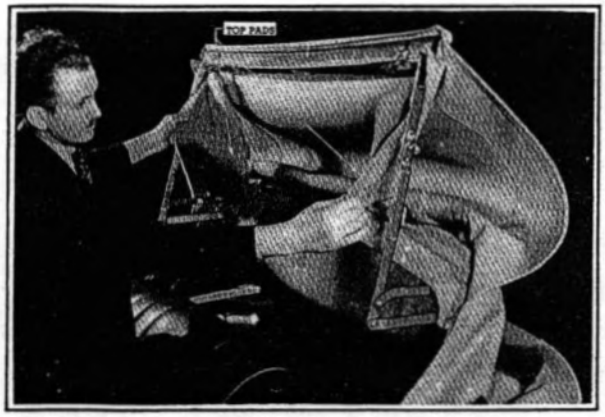
Operation 2. Unsnap glove fasteners (three on each side). Failure to do this operation before lowering the top will cause fasteners to pull through the top material.



Operation 3. Loosen two thumb clamps at top of windshield.

Operation 4. Unsnap six fasteners at the top of the back curtain, pull zippers all the way down and snap curtain in two places at the bottom in package compartment, back of seat.

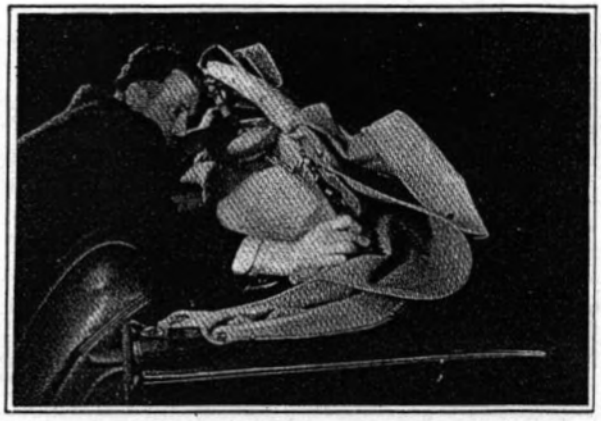
Operation 5. Push back light toward the rear and drop back bow all the way down.



Operation 6. Pull top pads inward to provide clearance for top joint and to avoid tearing top material.

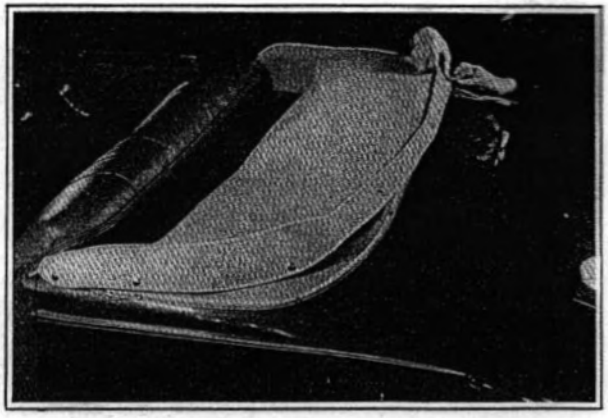
Operation 7. Push back slowly and fold top material all the way back.

Operation 8. Attach top boot to front bow. Be sure top material does not bind at the hinged joint.



Operation 9. Release top joint locks and fold bow forward.

Operation 10. Fold quarters under at ends and fold top material forward.



Operation 11. Slip boot over top and snap in place; start at the front, then at the center and the others in order.

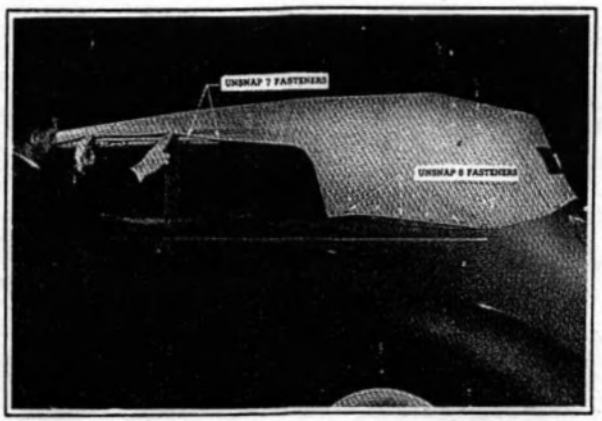
NOTE—To obtain a smooth appearance tap the high spots with the hands. To put the top up reverse the operations.

CONVERTIBLE SEDAN TOP RAISING AND LOWERING

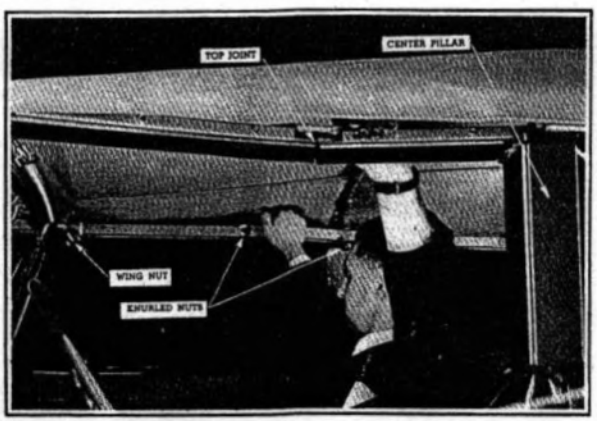
Observance of these instructions will eliminate likelihood of damage to the top material and facilitate the operations.

It is essential that the operations be performed in their proper sequence.

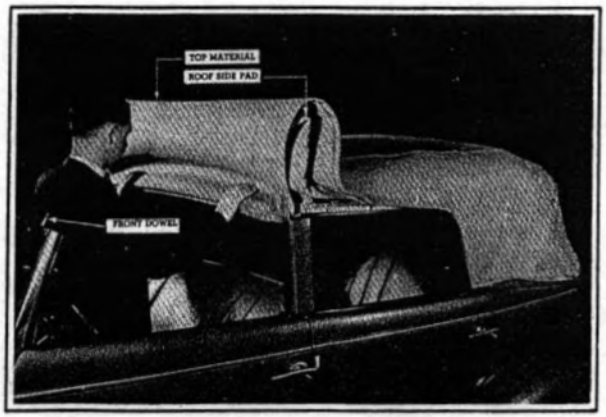
Operation 1. Lower all windows in the doors.



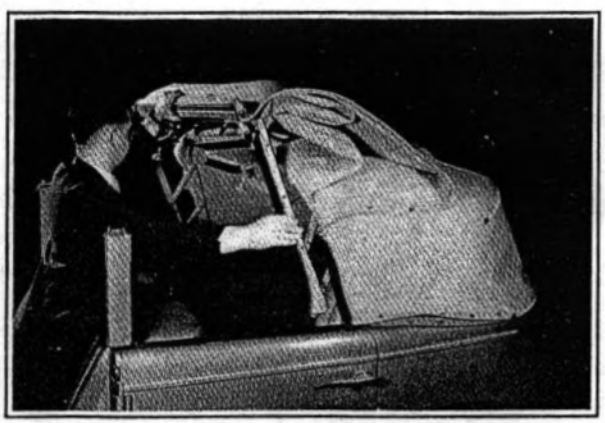
Operation 2. Unsnap all glove fasteners along roof side rail and rear quarter above rear wheel (12 fasteners on each side). Failure to do this operation before lowering the top will cause fasteners to pull through the top material.



Operation 3. Loosen two wing nuts at the top of windshield and two knurled nuts over front doors and two at top of center pillars. Use wrench in envelope on back of this booklet if necessary.



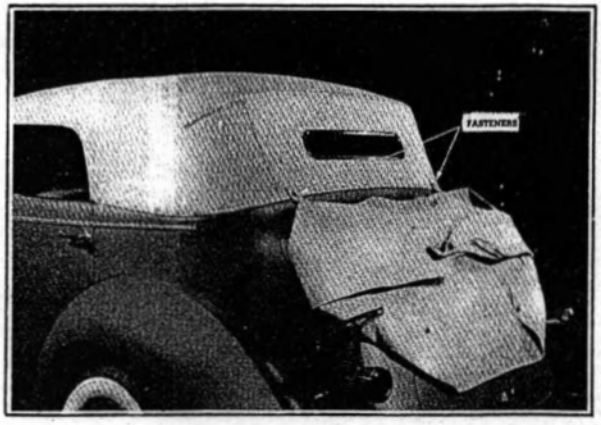
Operation 4. Lift top off front dowels at windshield header and break joints in toward center of body. (See illustration B.) Fold header bar back against first steel bow. Keep top material and roof side pad from between bows.



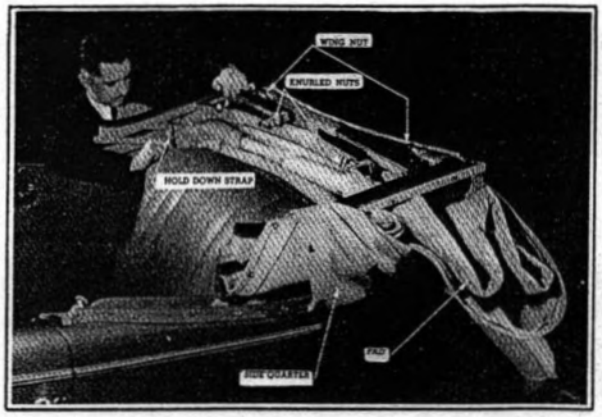
Operation 5. Push top back in position shown in illustration.

Operation 6. Remove center pillars and store them in the trunk at the rear.

Operation 7. Fasten the two tabs on lower edge of the top "boot" to the two fasteners on the outside of rear belt rail.

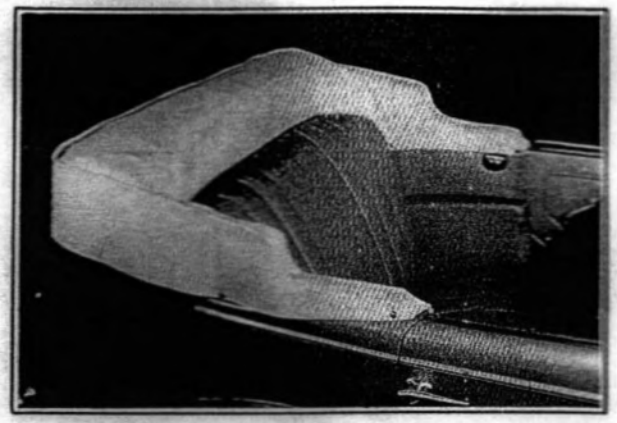


Operation 8. Loosen knurled thumb nuts at rear pillar, or just above smoking cases.



Operation 9. Push back slowly allowing top to fall into the position shown in illustration. Screw down two wing nuts and two knurled nuts to allow better clearance. Fold side roof pads up on top of rear bow. Fold side quarters up. Fold over top material. Buckle hold-down straps. The top is now in position to apply "boot."

Operation 10. Slip boot over top and snap in place.



NOTE—If, when raising, the top fails to register on the front dowel pins, loosen knurled thumb screws at the top of rear pillar which will relieve the tension. Tighten wing nuts and all thumb screws using a wrench to pull firmly into place.

NOTE—To obtain a smooth appearance tap the high spots with the hands. To put the top up reverse the operations.

NOTE—The material can be cleaned easily by rubbing briskly with "art gum" eraser and then brushing with a whisk broom.

BODY SERVICE SHOP SUPPLIES

No. 45 WELT SEALER

For cementing windshield and back light rubber without removing the glass. To be used in the special gun ST-968. This may also be used in filling open joints to keep out dust and air.

ARCO TRANSPARENT ROOF DECK CEMENT

For cementing roof decks when replacing the top.

No. 181 CEMENT

For cementing sponge rubber weatherstrips around the doors to stop air and water leaks. May also be used for cementing rubber covering to running boards.

No. 184876 RUBBER DOUGH

For silencing wood and metal joints. May also be substituted for glue in joining wood members providing the members are also held in place with wood screws or bolts. It is strictly waterproof and eliminates squeaks.

ARVEYTEX

Waterproof cement used for cementing heavy stiff materials, such as carpets and jute silencing pads.

No. 311 GOODYEAR TRIM CEMENT

Used for all general purposes in cementing trim fabrics.

No. 19 MORTEX INSULATING MATERIAL

Used for sound silencing metal panels, can be applied with a brush. May also be used for filling joints to stop air leaks, but requires careful handling as it remains plastic.

No. 55-C PUTTY

Commonly known as dumdum putty and is used in filling low spots at the windshield wiper support tabs when installing a windshield. It may also be used as a general purpose putty in service.

NOTE—The above list of materials are used for the various functions in building bodies at the factory and may be procured in the usual way from the Factory Service Stores Division. However, for general service purposes in the smaller shops all of these materials may not be necessary. No. 181 Cement can be used for cementing roof decks, weatherstrips, trimming material, running board covering, etc. No. 45 Welt Sealer is essential for sealing windshields and back lights and No. 35-C putty will be very useful in filling up joints to stop air and water leaks.

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