Glass & Regulator Remedies

by Lorin Sorensen & Ray Horton

Sharpen up Your Old Model A Restoration or That New Job With Some Corrective Adjustments.

Because of the apparent difficulties, most restorers shy away from anything to do with glass problems and, as a result, it is not uncommon practice to send the complete Model A to the glass specialist or—rattle along with the ailment. Actually, glass and regulator troubles of the Model A Ford are not so complicated to solve—once you overcome the fear of disturbing the side panel upholstery and delving into the lower window recesses.

The Regulator

A typical design of window regulator used by the closed-body Model A Ford is shown in Fig. 1. The inside crank handle operates a set of gears to raise or lower the arm, which is attached to the steel glass channel holding the glass by a roller that travels in a slot in the channel. The roller travels horizontally as it assumes the different positions given it by the lifting arm when the glass is being raised or lowered.

Accordingly the lifting action at the bottom of the glass panel is always more or less beyond center. It is farthest from the center when the arm is parallel with the steel glass channel, as shown in Fig. 2, and therefore exerts a side pressure when in motion up or down. For example, as the glass is being raised the top corner of the glass at **B** is being crowded hard against the felt glass channel, and in cases where the glass is too narrow for the space between the glass channels, shown in Fig. 2, the glass is thrown out of alignment and will stick or otherwise fail to function properly, and eventually will tear the felt glass channel. The glass panel should fit snugly between the channels, allowing a small amount of clearance only for the channel expansion that occurs in damp weather.

The Channel

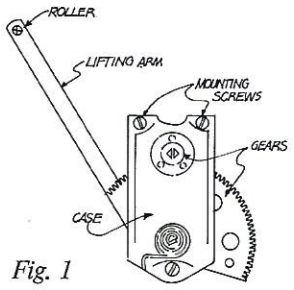

Fig. 1

There is a method which can be used to correct a narrow glass giving trouble other than by installing a new glass of the proper size. The average case can be corrected by removing the garnish or glass mouldings and the upholstering and narrowing the opening **A** with one or two cardboard shims inserted between the felt channel and the post, as shown by **C** in Fig. 2. Thus the glass is forced into alignment and is given a bearing on the channel for the entire length on each side instead of just at the points **B** and **BB**. The shims **C** can be held in place by glue on a steel-post or tacks on a wood-post job. Should you find the glass opening **A** wider at one point than at another and the glass fitting the narrow space properly, shim only part of the way to make the channels parallel their entire length. Renew felt channel that has been snagged, worn or torn. Then replace the garnish moulding and upholstering.

Another method of correction, particularly when the glass is found to be 3/16 inch or more too narrow for the opening **A**, is to take up the opening with a sash spring, shown at **D** in Figs. 2 and 3. Sash springs 3½ inches long and 3/8 inch wide are sometimes obtainable as obsolete stock or can be made using the illustration (Fig. 3) as a guide. Although the spring is slightly wider than the channel opening it can be set inside of the channel.

Lower the glass all the way down and insert the sash spring between the glass and felt channel so that the top of the glass is centered with the arch of the spring at the belt line. Then attach the spring through the felt channel to the steel post with a flat-top rivet or screw it to a wood post.


Ford Archives

The feel of a well-hung Model A door will take on additional qualities with a properly adjusted inner mechanism and glass.

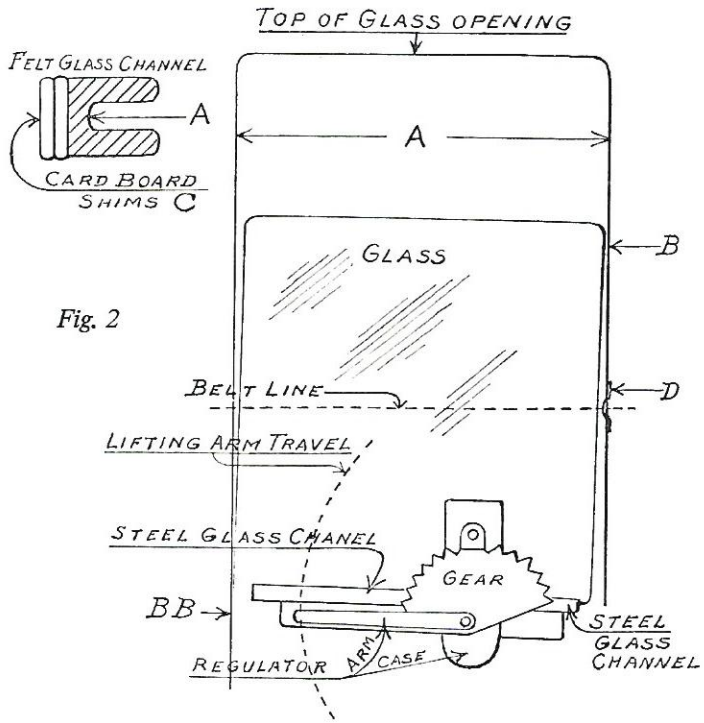

Fig. 2

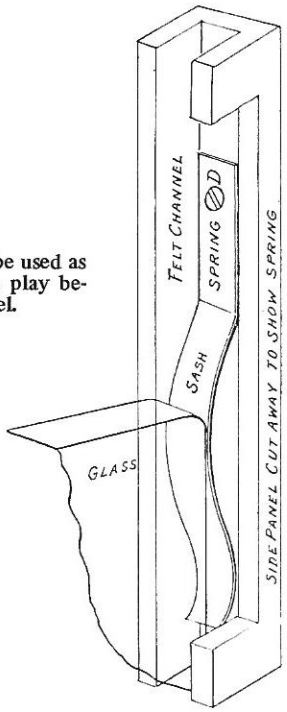

Fig. 3 (right) **Sash springs can be used as a means to eliminate excessive play between window glass and channel.**

Fig. 4 (below) **A typical wood frame automobile door section.**

However, sash springs here should be considered a last resort to a proper restoration. If the glass is that narrow that it will not align with minor shimming, a new piece should be cut and installed rather than to make extensive repairs or alter the original body structure.

Spring Can Be Set Between Moulding and Channel

If the opening between the glass and channel is too small to insert a spring in the channel as in Figs. 2 and 3, the same type of sash spring can be set between the garnish moulding and the felt glass channel to take up play in the glass, as shown by **D** in Fig. 4. One spring on one side is generally sufficient to check the rattle, but if it is not, a spring can also be set in on the other side. Should the spring cause the glass to strike and rattle against the belt rail, place the spring on the opposite side of the felt glass channel at the point **EE**. Note that the spring is set well down below the top of the belt line and in this case should not affect appearance.

The roller attached to the lifting arm and connecting to the steel glass channel at the bottom of the glass will become worn or broken and should be repaired or replaced.

The screws or bolts attaching the regulator case to the belt lining bar will also work loose and allow the regulator to get out of line, with the result that the roller works out of the slot in the steel glass channel. Remove the garnish moulding and the upholstering and tighten the attaching screws or bolts; then replace the parts removed.

From other causes, too, the roller may fail to function. Occasionally trouble also is found when the attaching screws or bolts protrude beyond the inside of the belt lining bar so far as to strike and hold the regulator lifting arm as it passes. Note **F** on Fig. 4. Correct this by cutting off the ends of the bolts. Slightly bending the regulator arm so that roller will bear against the glass channel will correct a rattle that may develop at this point. Care should be taken, however, as severe pressure at this connection will tend to cause the glass to break when the door is slammed shut.

The cause of repeated breaking of a door glass is sometimes hard to determine. Most such trouble is found in the all-steel door, which is more flexible than the wood and metal door and will whip hard when it is slammed shut. Accordingly, the Model A owner, out of respect for his car, does not slam the door too hard. The location of the glass before the break, the direction of the break, and the position of the glass parts after the break should help you determine the cause. Note glass break **X** in Fig. 5, which illustrates the appearance of a glass break when the glass runs in the posts are out of line. Channel point **Y** should be moved in or point **Z** moved out to make **X** parallel.

Correction of Causes of Glass Breakage

Should the break occur when the glass is up, correction can be made by shifting the garnish mouldings to relieve the strain. If the break occurs while the glass is down the upholstering should be removed and the glass run rabbet cut wider. Should the run become too wide and allow the glass to rattle, tighten with a sash spring.

When new glass is set in the channels, check it carefully at different elevations for any points that are not free and correct to relieve any strain before the upholstering and garnish mouldings are replaced. If the bottoms of the side

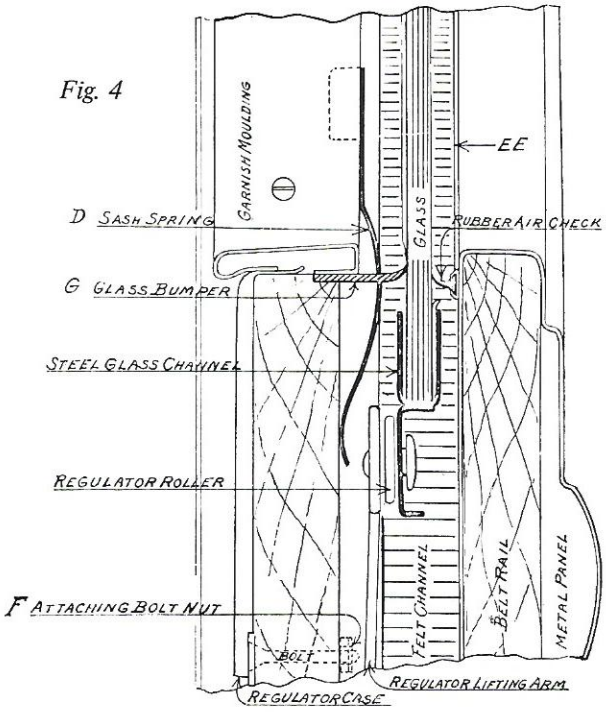

Fig. 4

garnish mouldings are too far in against the felt channels they may cause breakage when the glass is part way down. As the body is narrower at the bottom than at the belt and top, it is necessary for the post glass runs to be wider at the belt than at the ends to allow the glass clearance to complete the curve of the body, as shown in Fig. 6. For this reason we suggest the sash spring **D** in Figs. 2, 3 and 4 to take up side play in the glass at the belt, rather than the easier stunt of moving in the bottoms of the side garnish mouldings.

To check the whip of the top of the glass when down in the door, Ford body manufacturers placed a rubber bumper about 1½ inches long (**G** in Fig. 4) to the top center of the belt bar under the Model A garnish moulding. The bearing of the bumper on the inside of the glass and the rubber air check **H** in Fig. 4, running the entire length of the belt rail, is supposed to eliminate the whip of the glass.

Should you fail to find some form of bumper such as **G**, or bumper **G** fails to bear against the inside of the glass, remove the garnish moulding and tack a piece of flat rubber along the entire length of the top edge of the belt bar with the outside edge of the rubber strip bearing on the glass. Windshield **T** rubber with the flange cut off will serve as a replacement rubber strip if a stock item cannot be located.

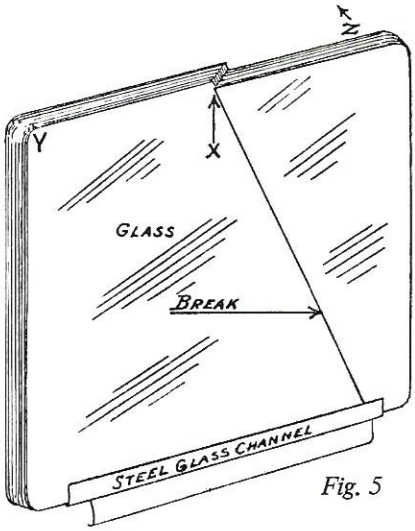

Fig. 5

Fig. 5 (above) **A careful observation of the location and direction of a break can help determine the cause.**

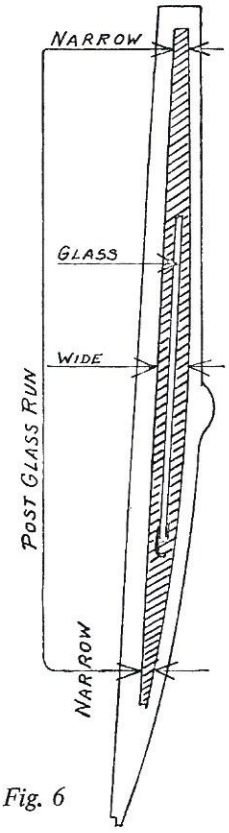

Fig. 6

Fig. 6 (right) **Post glass runs must be wider at the belt to accomodate the flat glass travelling the curve of the door.**

TINY TIPS . . . FROM READERS

● Many Model A owners have been plagued for years with oil leaking from the rear main bearing. First of all, it has been noted by some that the bearings in a Model A engine, in the first five thousand miles of their life, become loose enough that all of them (both rods and mains) should be readjusted for proper oil clearance at or about that time. If this servicing is done, many future engine noises and problems will be prevented. Before attempting to correct a rear main oil leak, a very careful inspection should be made to prove that it is actually the source of the leak. To do this, clean off all fresh oil traces from the engine, jack the car up, and level it on axle stands for a running test and inspection. Take off the flywheel housing dust cover and start up the engine. Use a small mirror and a flashlight to carefully observe the rear main through this hole.

Also, take care to see that your real leak is not coming from the rear end of the camshaft as this can be confused with a rear main leak. Also inspect around the valve side cover plate and oil return tube as well as the oil seal around the front crank pulley. If necessary, run the engine hot for about half an hour to check for the leak location.

In practically all cases where the rear main leaks, the center main will have excessive clearance which must be corrected to effect the proper rear main maintenance. It follows that the front main should also be properly adjusted at this time. While you have the rear main cap off, remove the oil drain tube. Even if it has been brazed or welded in, this is a must. The purpose is to be positive that no obstruction exists in this drain passage. Prove that it is free-flowing—blow through it in the direction of oil flow. Look to see how far the oil drain tube extends into the passage intersection. If it protrudes at all, it will be necessary to grind or cut off that side enough to permit an unobstructed flow. If the threads do not allow the pipe to be absolutely tight, it will be necessary to braze it into place to prevent it from falling out. There should be no main bearing shims cut into a U shape to go around the bolt as is often done to permit easy installation without completely removing the cap. This U-shape provides an open path for oil to travel into the bolt area and cause a leak at the bolt head or nut. New gaskets and careful reassembly should produce a leak-free system. From *The Flying Quail, Pembroke, Ontario, Canada Chapter.*

● I have a solution for installing [Model A] gear shift lever springs. This method works better for me than any other I have tried.

First, run two pieces of wire through the center of the spring. Wire must be flexible enough to twist, but strong enough to hold compressed spring.

Next, compress spring in a vice until all coils are together. While spring is compressed, twist the two pieces of wire to hold the spring compressed. Space the strands of wire 180 degrees apart on the spring to prevent spring from twisting when released from vice.

Taking the tied, compressed, spring from the vice, drop it into the transmission cover, push gear shift lever through spring—install clip on lever pulling lever back toward spring to keep the clip in place. Position shifting forks. Finally clip wires that are holding spring compressed and pull wire out of cover.

Be careful while handling the compressed spring as it is holding a fire cracker with the fuse lit. *Paul Harless, Minot A.F.B. North Dakota.*

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A certain famous motor-car manufacturer advertised that he had put a car together in seven minutes. The next evening he was called on the phone at dinner time and asked if it were so.

"Yes," was the reply. "Why?"

"Oh, nothing. But I believe I've got the car."