

Speedometer Calibration

This is the procedure I used to correct the error I had with my speedometer. Since it is for indicated speed only, it will not address errors with the odometer. My car is a 1972 DS21 with the last dash, the one with the round dials. This procedure may have direct application to earlier speedometers, but I really don't know as I have never dealt with one.

To correct your speedometer error, you must know exactly what the amount of that error is (actual vs. indicated). To do this, I used a stopwatch (or a watch with a second hand, not to be confused with a second hand watch) to time myself over a measured distance. Most interstate highways in the US have mile markers that can be used for this purpose. Find a stretch of road that is relatively light in traffic and with minimum hills. Even so, it can be difficult to hold an exact speed, so I use a five mile distance for better accuracy. The easiest speed for this is 60 MPH, since it is one mile in 60 seconds, therefore five miles in five minutes would be the target. Those dealing in metrics may find 60 KPH a bit slow to maintain on highways, so might use a target of 3 kilometers in 2 minutes, for 90 KPH, or whatever math they find easiest for them. Just remember, the magic number is 3600. Example - if you do a mile in 53 seconds, divide 3600 by 53, and you get 67 mph. If you're doing 75 mph, divide 3600 by 75, and you should cover the mile in 48 seconds. A navigator with a calculator can help a lot. When you find the speed that gives a true 60 MPH, make a note of the speed that is INDICATED on the speedometer. You will need that later. There are those who can calculate what the speed should be at a given engine rpm, and may want to ascertain the speedometer error that way. However, timing over a measured course will work regardless of tire size variations and/or tachometer errors, so I feel it is more accurate. Removing the cluster of gauges from the dash has been covered before, so my instructions start with the instruments out of the car. Re-assembly is pretty much the reverse of disassembly, so separate instructions for that are not given.

SPECIAL NOTE: There's an extra step that some may find useful that I did not include in the pictures. To make sure that the adjustment worked before replacing the speedometer in the car for a road test, it is possible to spin it using a reversing drill with a Phillips screwdriver bit. It won't spin up to 60 mph, but you can compare the speed indicated before adjusting with the speed indicated after adjustment, just to make sure there is a difference.

Fig. 1

Tools needed



(optional)

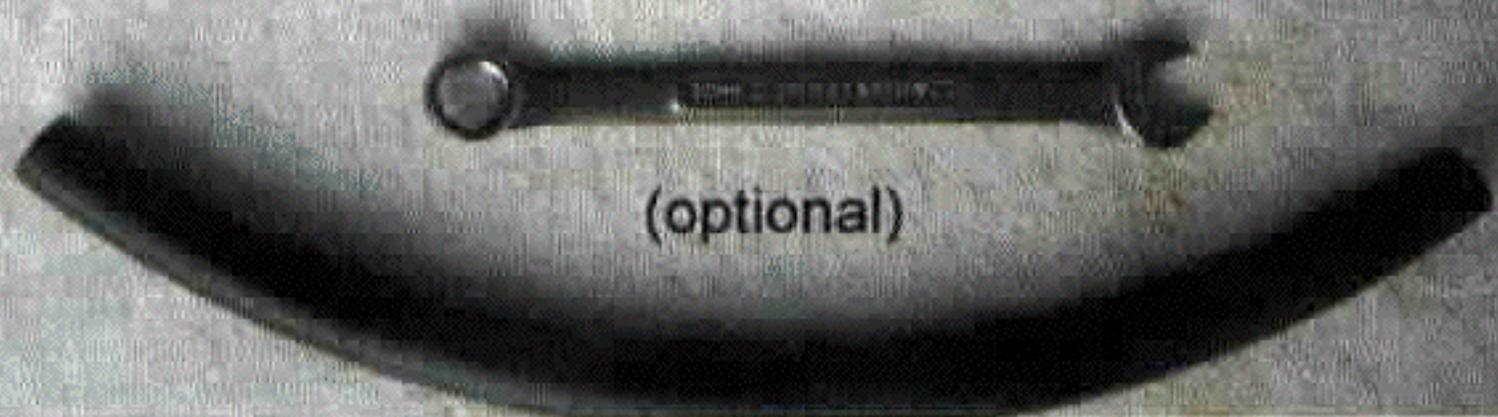


Fig. 2

Remove knobs for trip
odometer and warning light test.
A 10mm wrench can help.
Protect the surface from scratches.

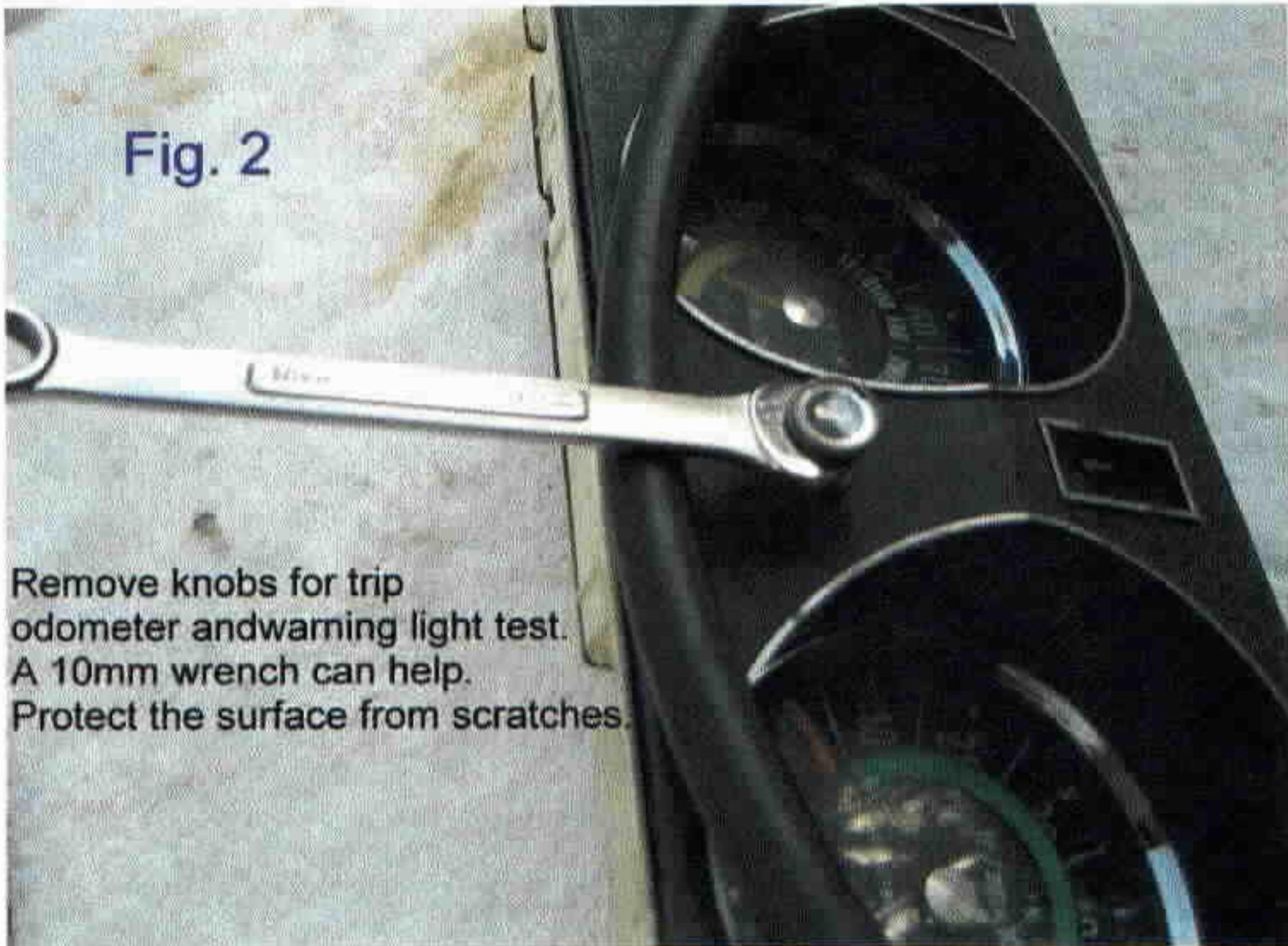
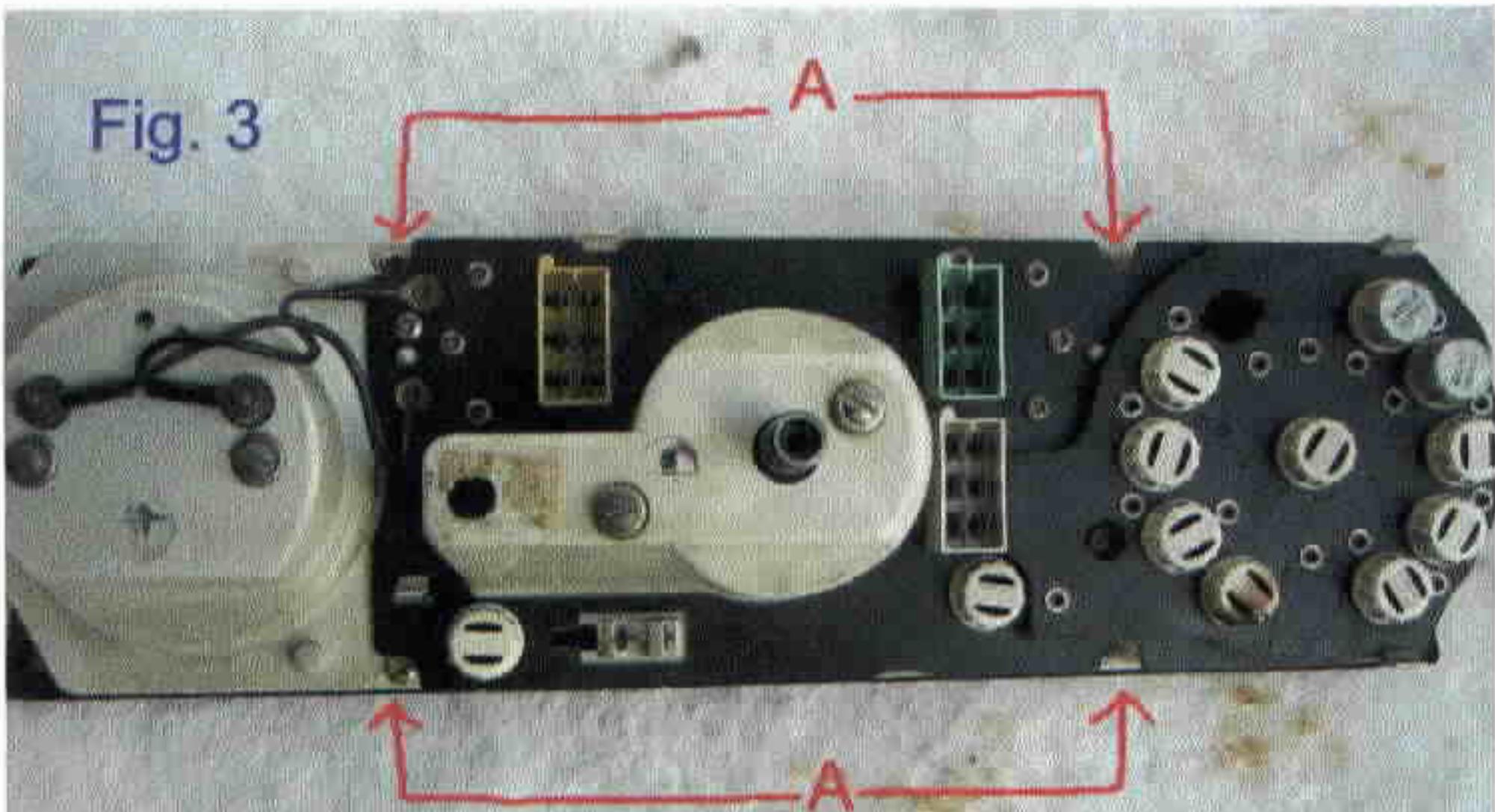


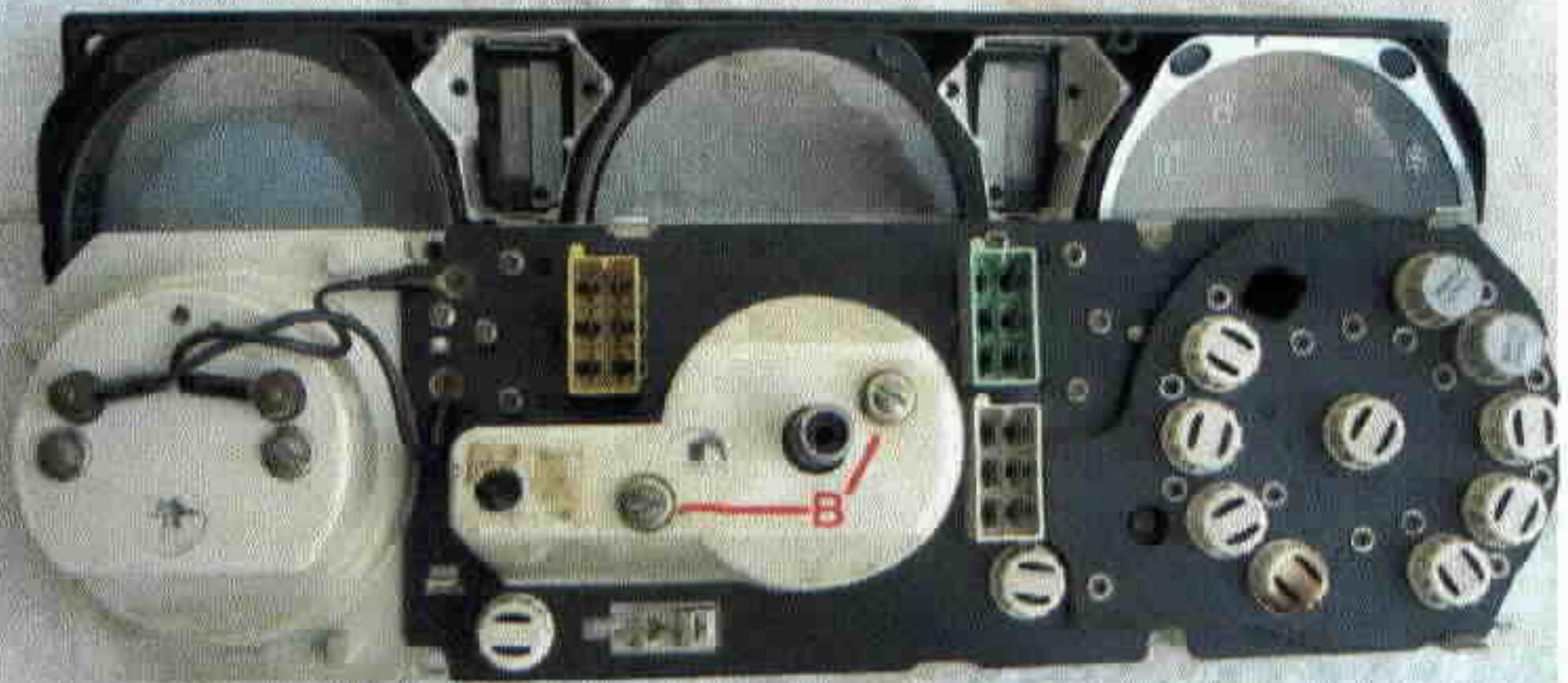
Fig. 3



Remove the four screws at A.

Fig. 4

This separates the face from the housing



Now remove the screws at B.

Fig. 5



Speedometer out of housing.



Fig. 6

Pull pin clip C.



Then remove screw D.

D

Fig. 8

Insert pointed tool into release hole.



Simultaneously, gently pry up on the odometer assembly.
Do the side opposite the gear first, then the gear side.

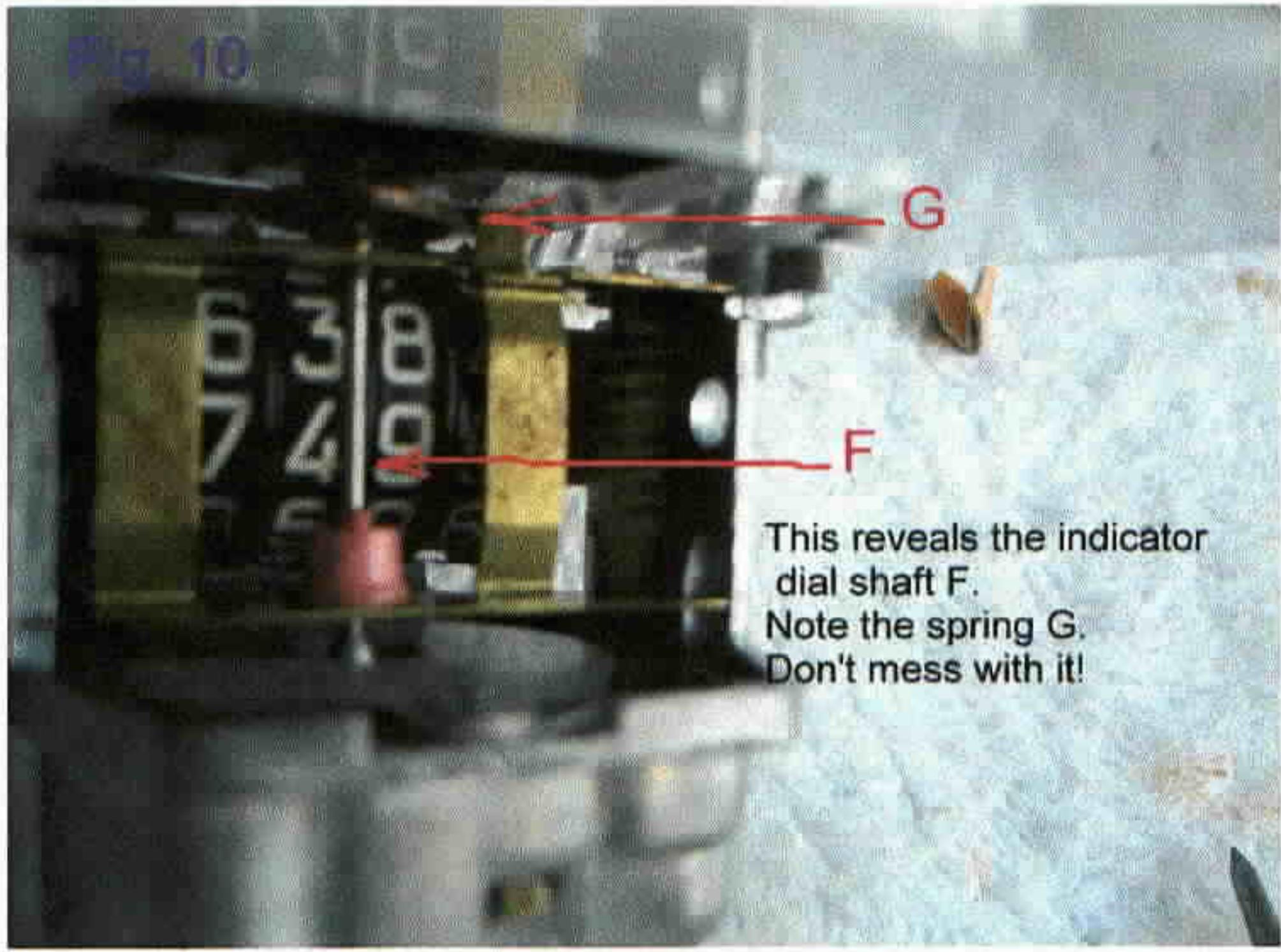
Fig. 9



After the assembly is released, fiddle with it until you get it out of the speedometer.



Fig. 10



This reveals the indicator dial shaft F.
Note the spring G.
Don't mess with it!

Hold the indicator at the speed INDICATED
when you were doing 60 mph.

Fig. 11



Fig. 12



Immobilize the shaft by grasping it carefully but firmly with pliers.

While holding the shaft, move the indicator to the correct speed.

Fig. 13



Reassemble
and road test.