

Nikon FE (FRE)

Tutorial by Eugene Pate

<https://learncamerarepair.com/>

<https://www.facebook.com/groups/360490091319202/>

Post #1

https://www.facebook.com/groups/360490091319202/?post_id=587093001992242

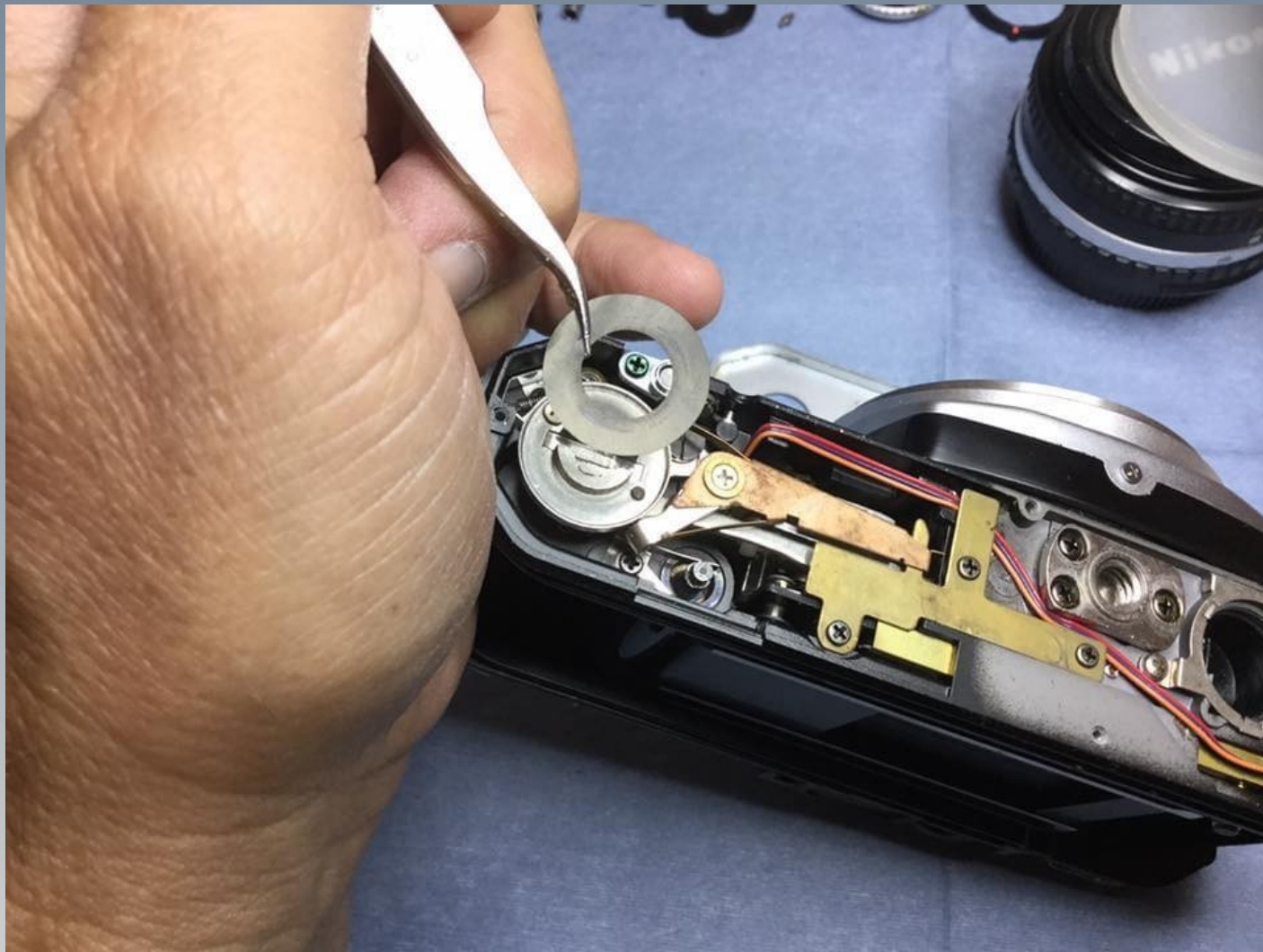
An old customer sent his Nikon FE with the metering not working, the auto speeds not working and when trying to take a photo on auto the shutter hangs open - a typical problem would be bad batteries in this model, a quick check revealed the batteries were good ... a check of the functional components revealed the aperture control ring (the ring held in by the lens mount) moves about a quarter of its movement then sticks. The aperture control ring is cord coupled to the speed resistor assembly, Nikon calls this part an FRE for functional resistance element - its function is to change with the selected lens aperture providing input to the metering circuit (this is the dial on the top cover where you select the film speed or ASA/ISO).

I'm going to disassemble the camera to shed some light as to where this system is malfunctioning.

First things first, always pull the batteries, an accidental short at the circuit could damage an IC (integrated circuit chip). Set the battery cap and batteries aside and remove the screws holding the bottom cover - these Phillips looking screws are actually cross point screws and a Phillips screw driver will not engage the slot properly, when you attempt to remove a tight screw with a Phillips screw driver it's easy to damage the screw head making the simple task of removing a screw a headache - Curt Fargo at micro-tools.com has the tools and materials required for those of you venturing into DIY camera repair.

There's a list in the Resources Section of the website learncamerarepair.com for more vendors and information.





Post #2

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Here's a photo showing the aperture control ring in it's stuck position, the ring will return to its rest position clockwise with a gentle push...

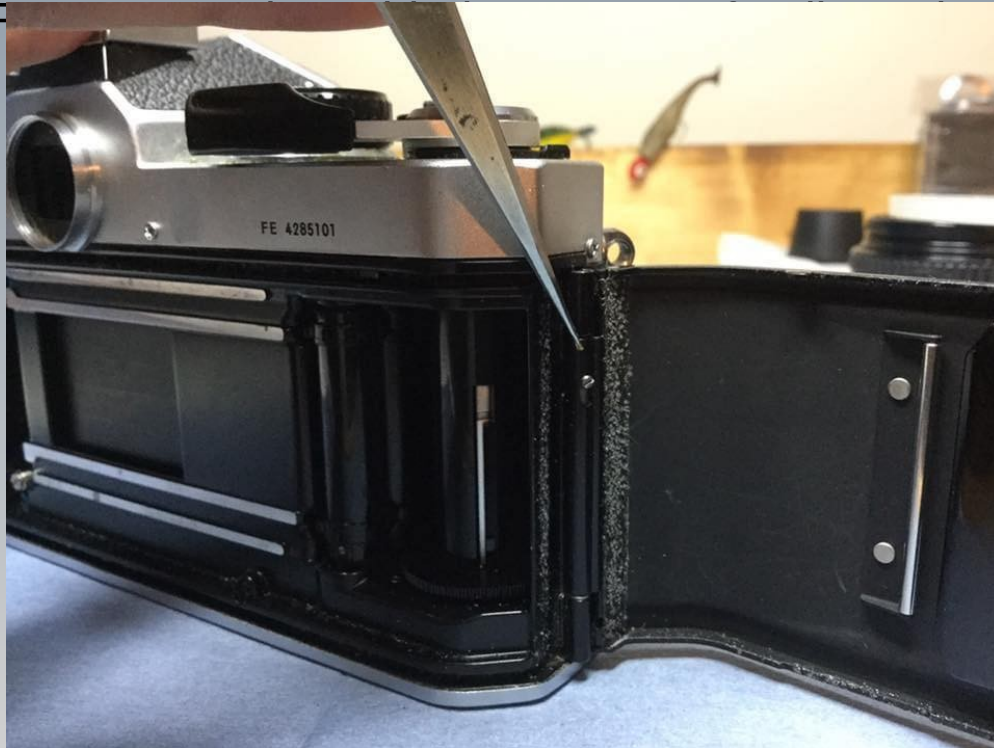


Post #3

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I'm going to begin disassembly at the rewind side of the body.

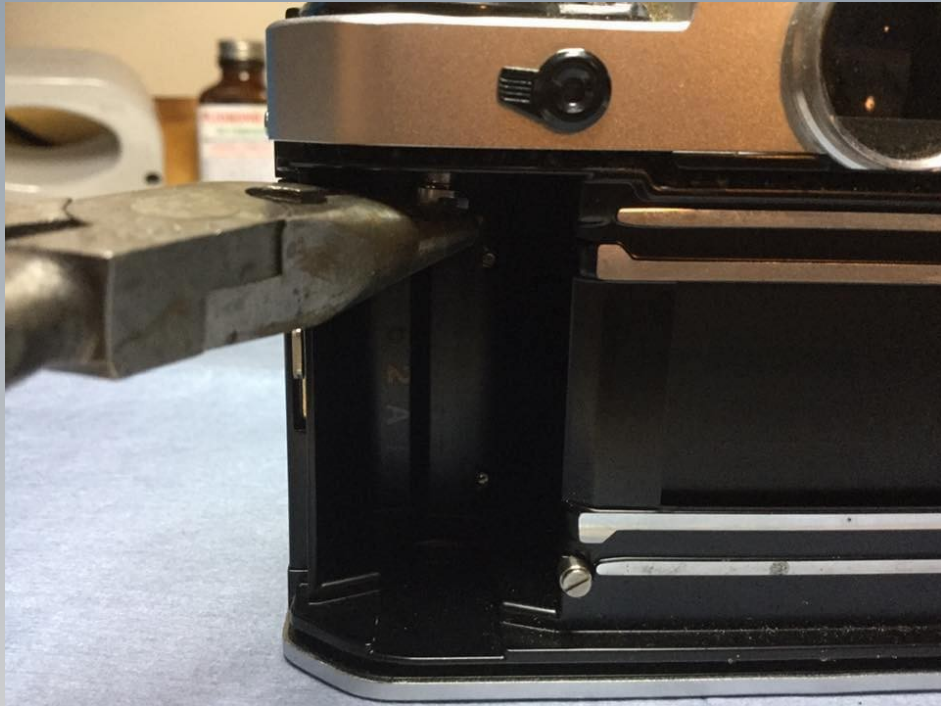
For convenience I'm going to remove the back cover and set it aside - find the spring loaded post located at the inside of the film door hinge - noted in this post with the tweezers pointing to the post - push the post towards the bottom of the camera and the top hinge pin will come free allowing the door to be removed. With the door removed watch your fingers and tools **DO NOT TOUCH THE SHUTTER** as it will bend easily.

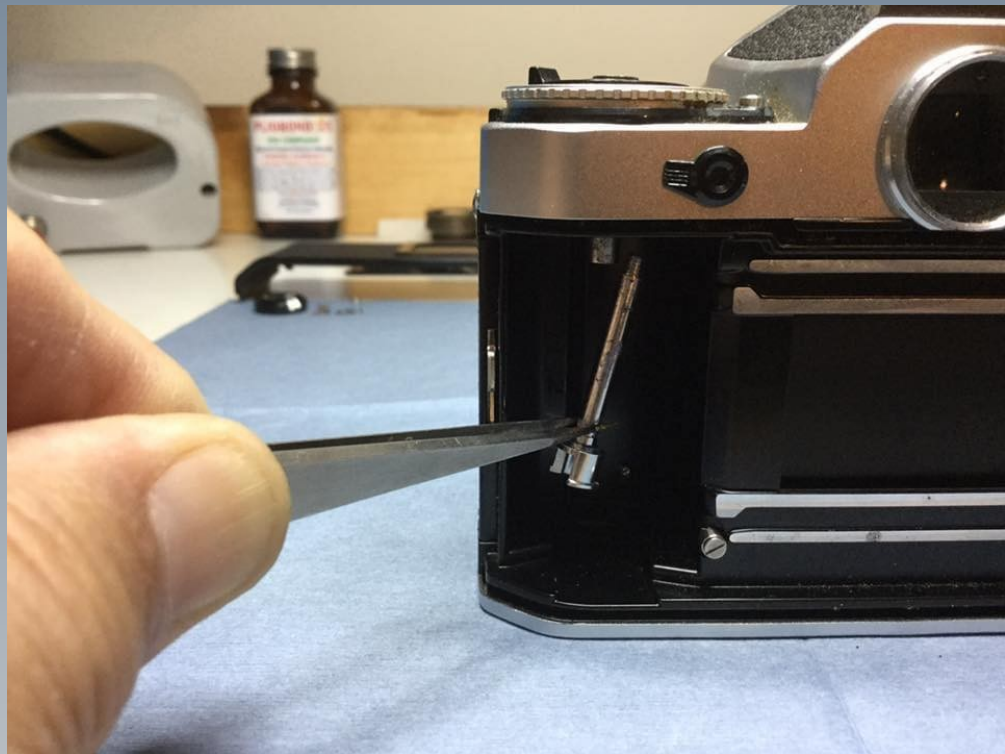


Post #4

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With the back cover (film door) aside, use pliers to hold the rewind fork, unscrew the rewind assembly knob - there will immediately be several loose parts including a spring - be careful not to lose any part. Photos are in sequence. Remove the snap ring holding the black plastic lock dial and lift off the parts, note the spring loaded lever in the rewind bearing shaft slow and remove that, then the three screws holding the decorator ring.



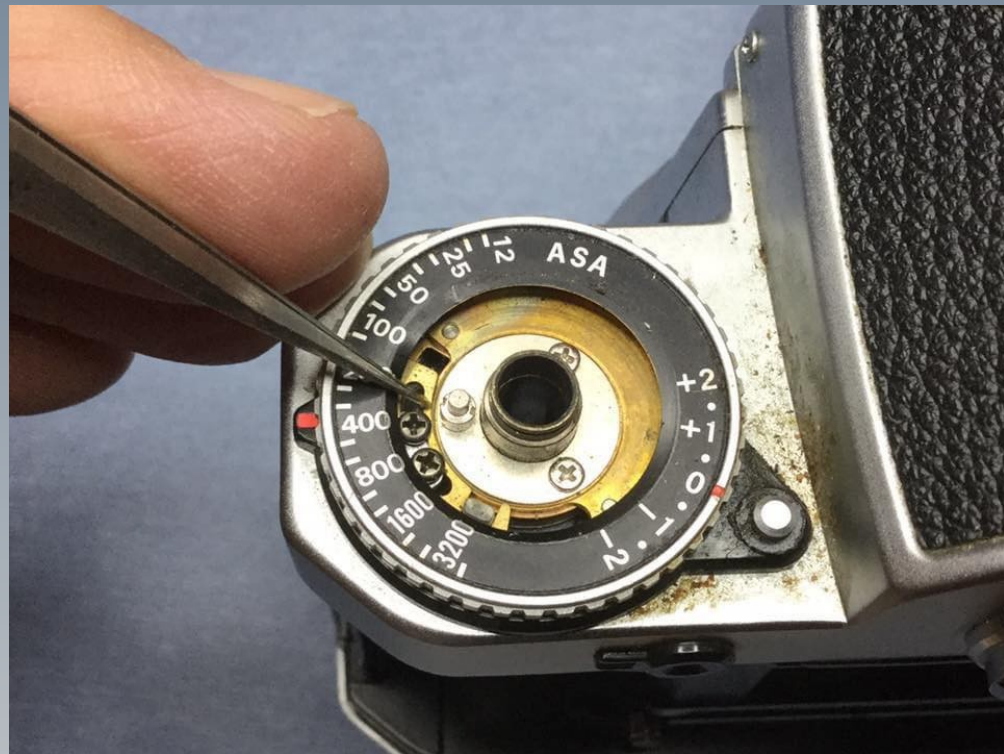




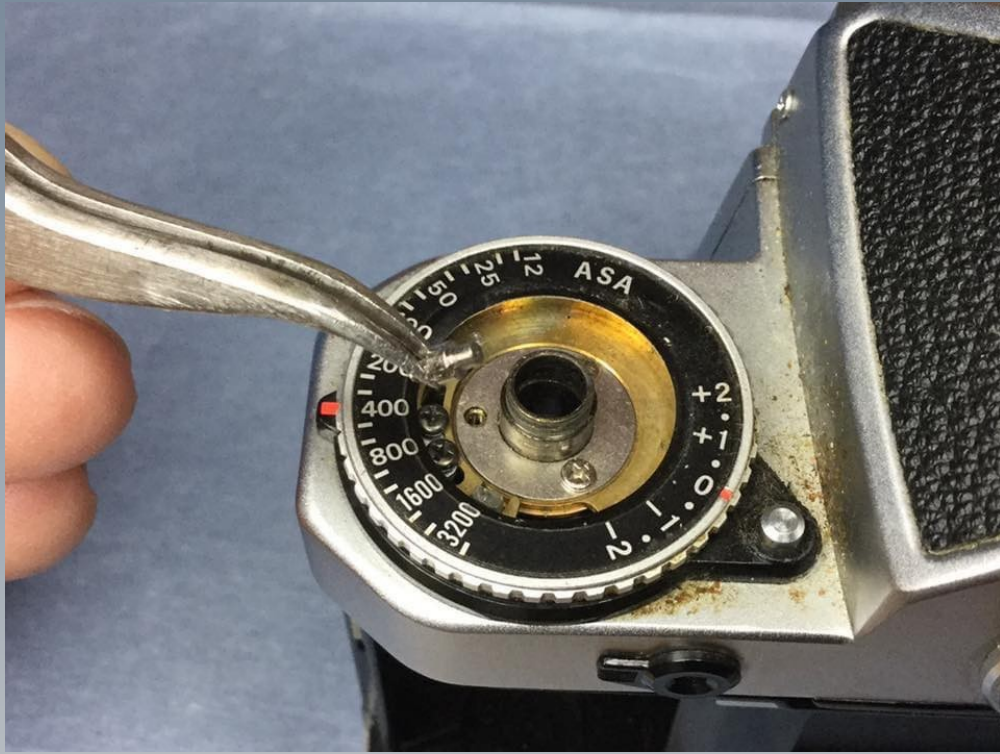


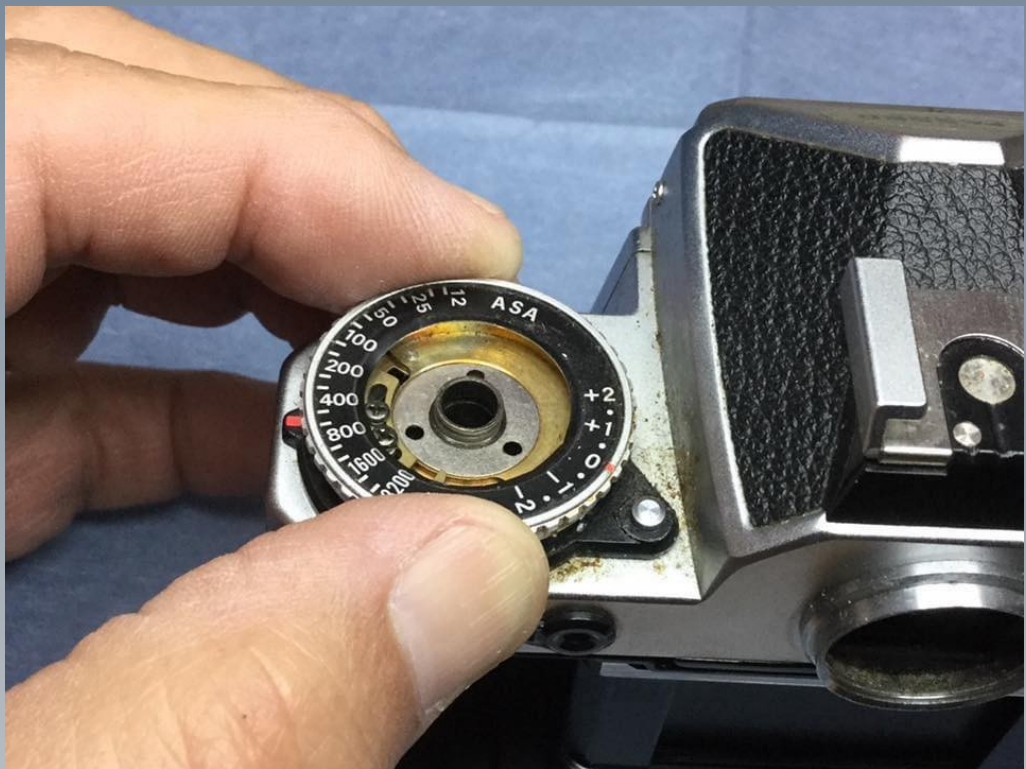














Post #5

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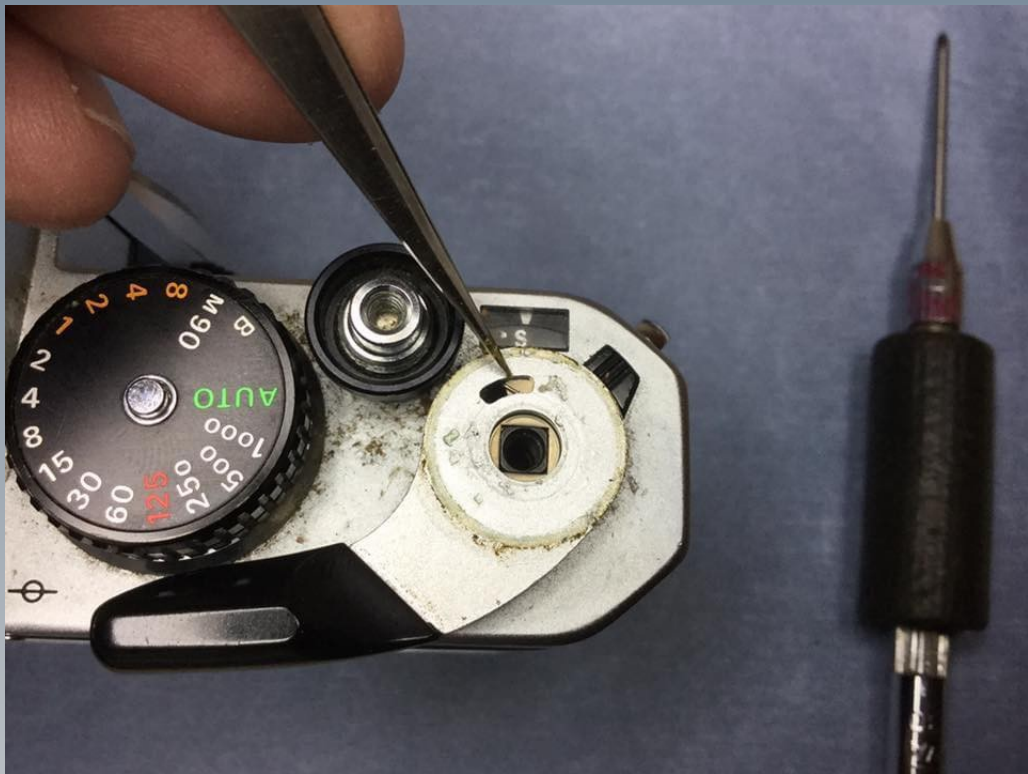
Moving to the wind side of the body note there is a round leatherette covering the winding lever cap-screw. Using a Q-Tip and 99% alcohol, place a small amount of alcohol on the cap to soften the glue or bonding agent, use tweezers to lift a corner and carefully remove the leatherette to avoid damaging it.

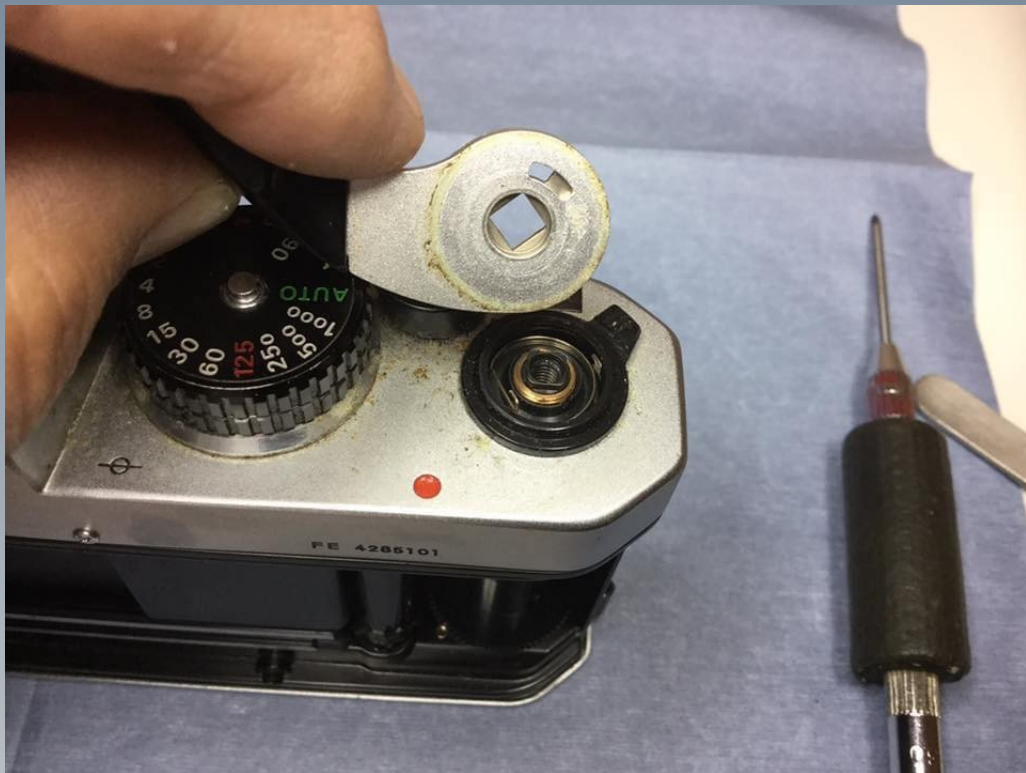
Next using a spanner with points attached (this tool can be found at Micro Tools Inc.) unscrew the cap-screw counter- clockwise - before lifting off the wind lever look into the small slot and see there's a spring hooked there, this is the spring that returns the wind lever after the film is advanced to the next frame - carefully lift off the lever turning it slightly to avoid damaging the spring. Photos are in sequence.











Post #6

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Moving to the shutter speed/mode selector dial, note there are three slotted screws around the circumference of the dial, all you need to do is lessen these screws and the dial will lift off. If a screw falls out try not to lose it.





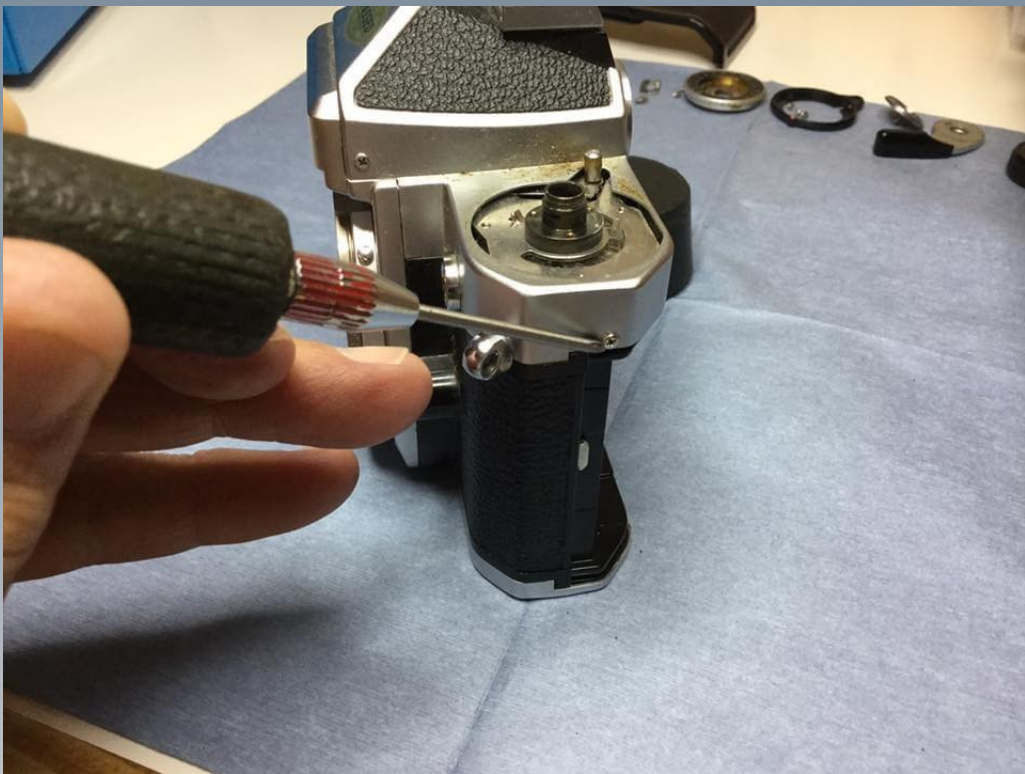
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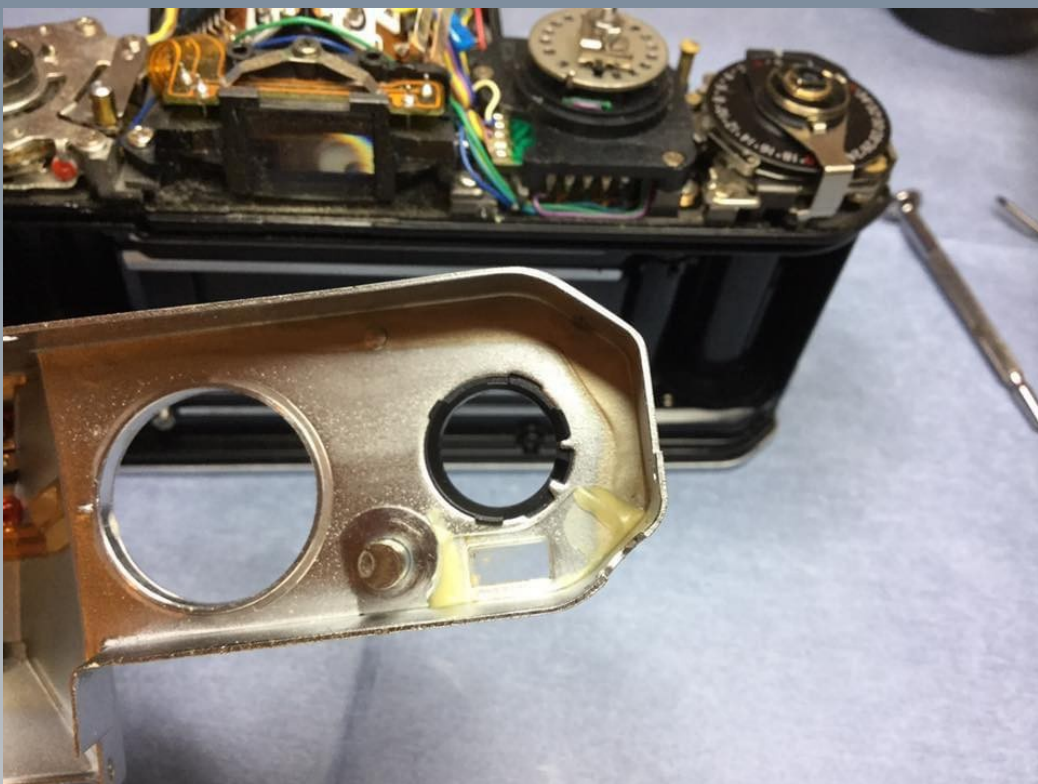
Remove the five screws holding the top cover and lift it off carefully - there are loose parts. The multi- exposure lever on the wind side is keyed to the multi exposure lever below the dial and the plastic dial is held onto the cover with three plastic tabs, you can leave it in place or remove it - if you decide to remove it there is a nylon slip ring under the plastic ring. Note the previously mentioned wind lever return spring and the release pin and it's spring are loose, shown in the photos in sequence.

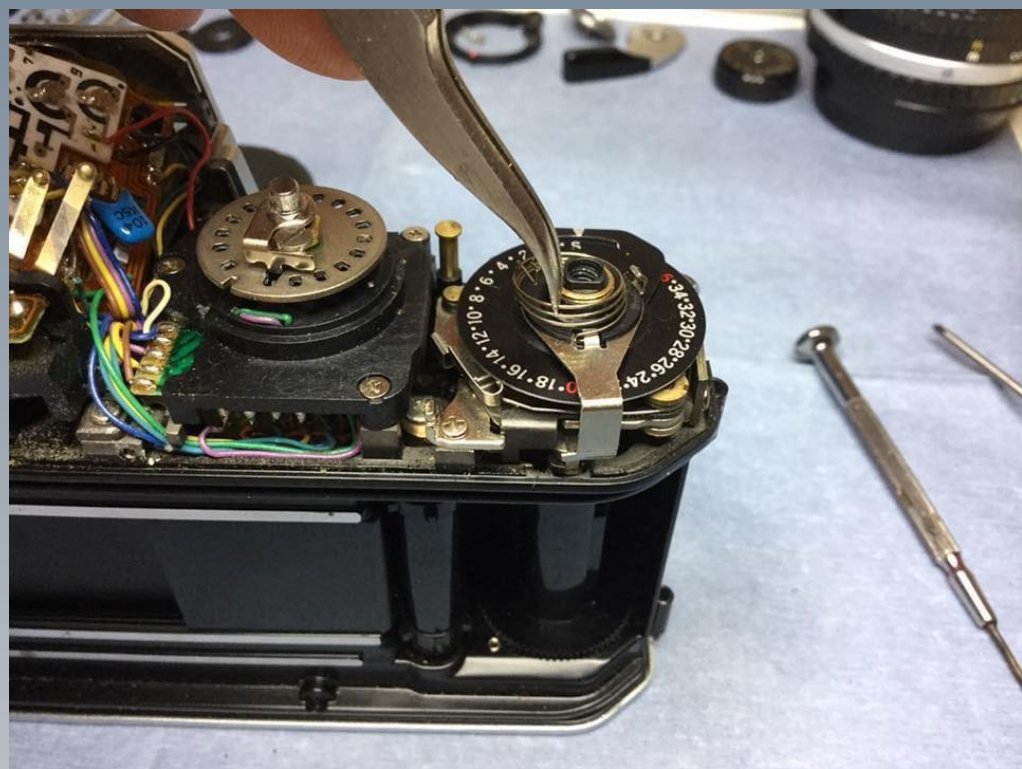
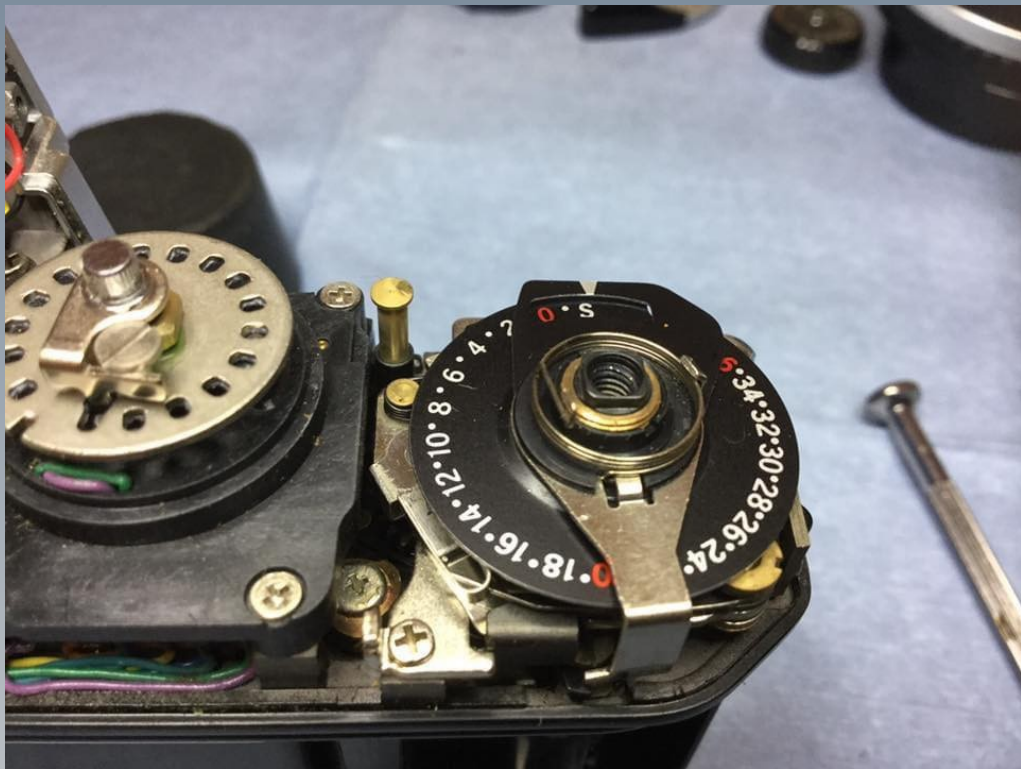


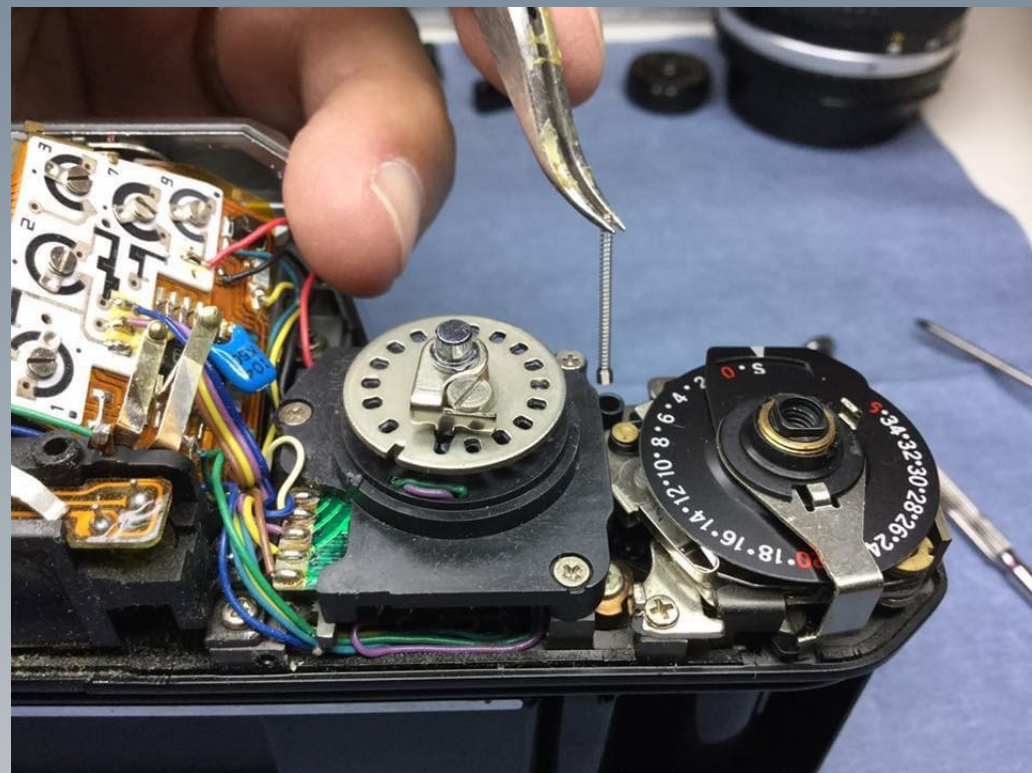
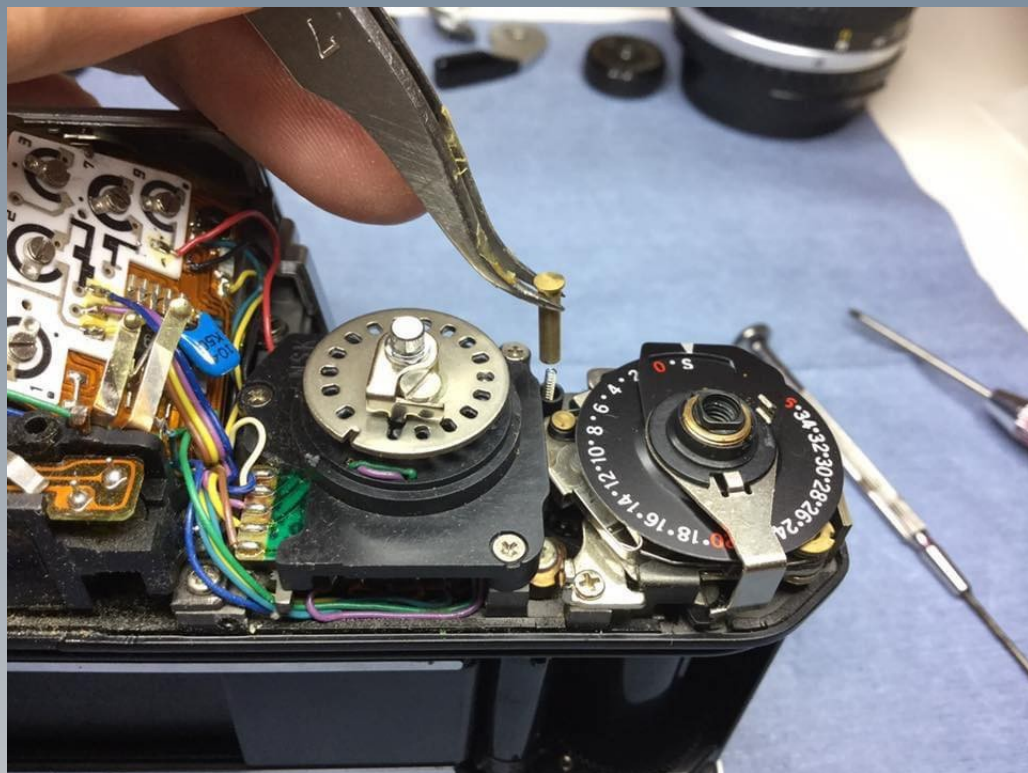


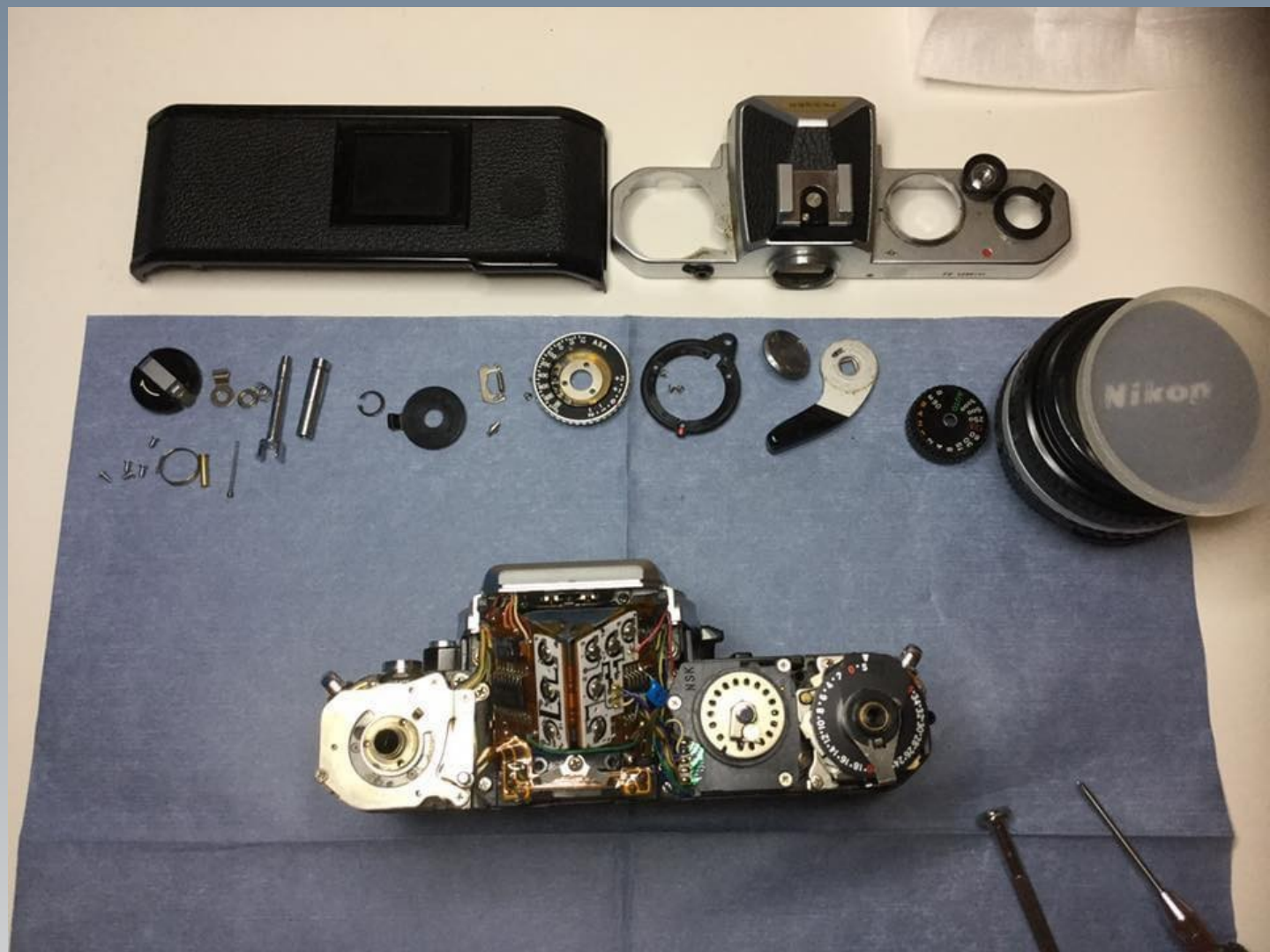












Post #8

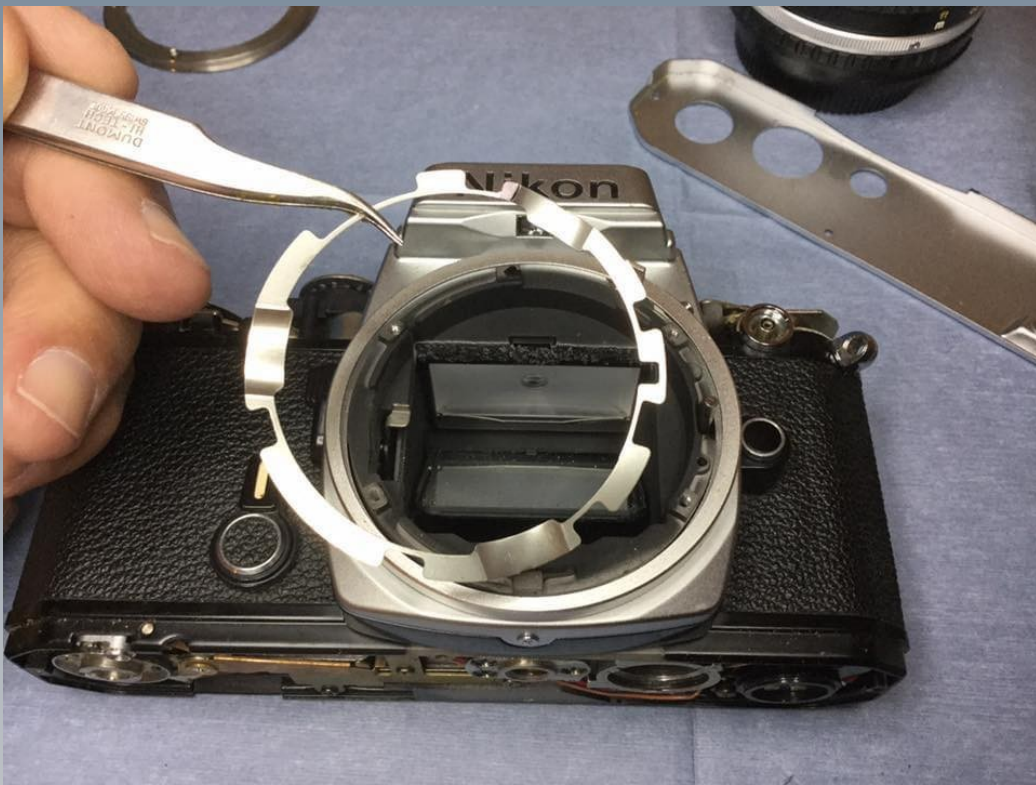
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At this point look everything over for any obviously loose or damaged parts.

I'm going to remove the lens mount to determine the condition of the cord connecting the aperture control ring to the FRE. Photos are in sequence - inspection revealed the cord is intact, not broken. Note; I marked the rotational position the the circular tension spring with a marker for ease of reassembly.









Post #9

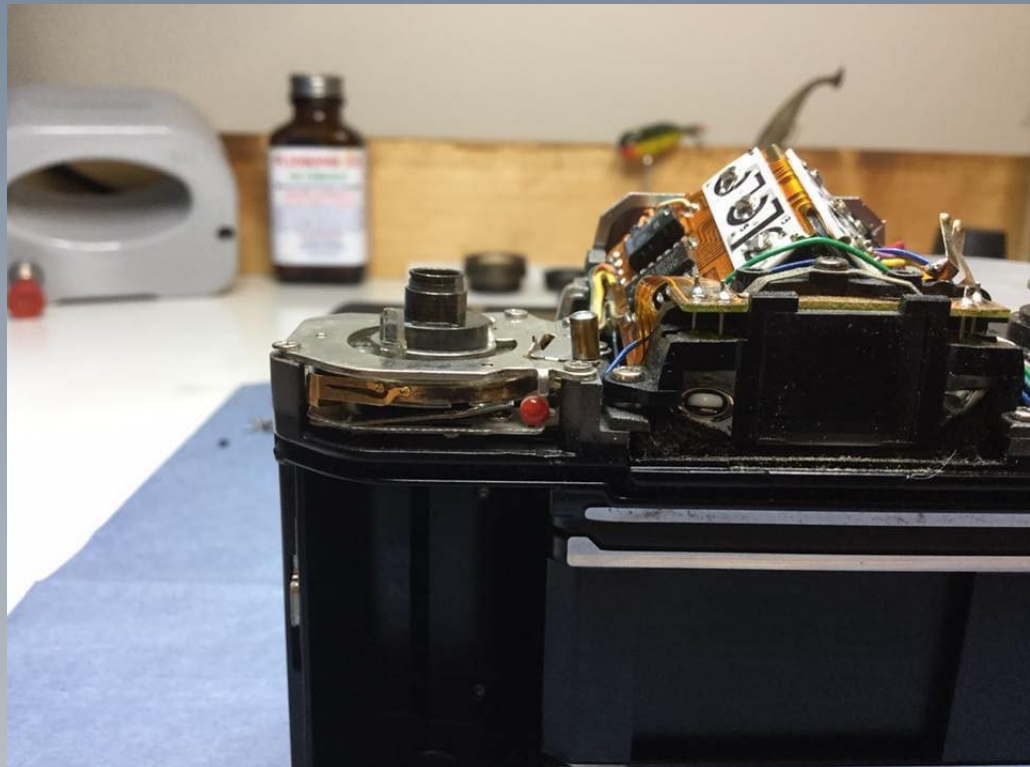
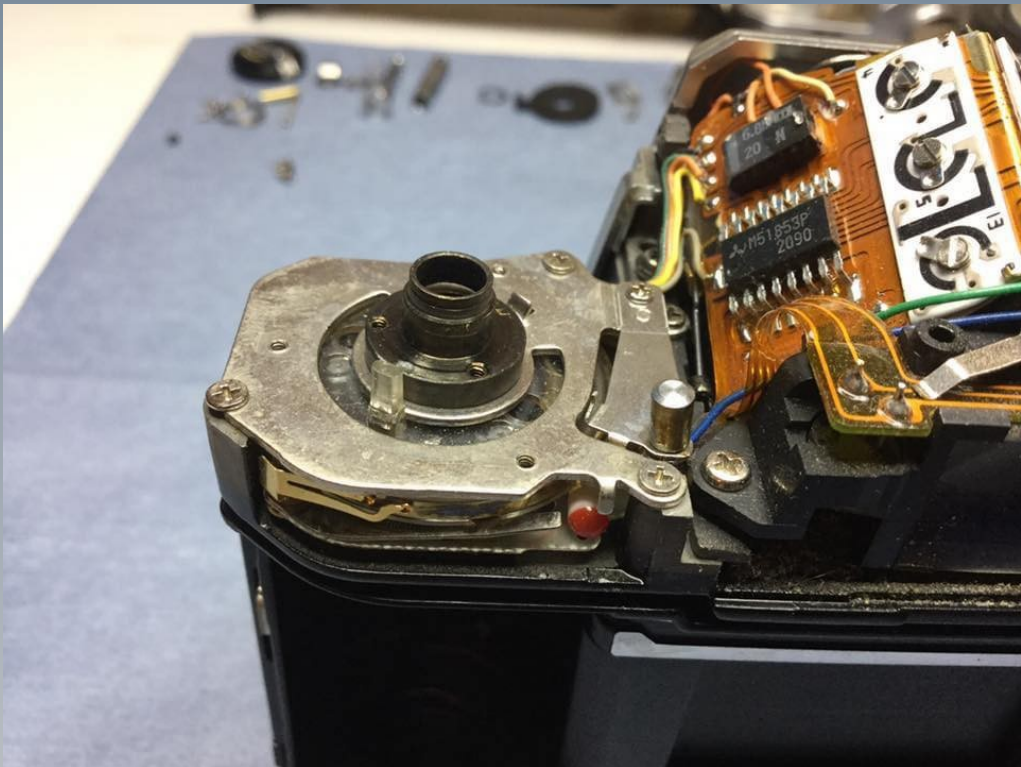
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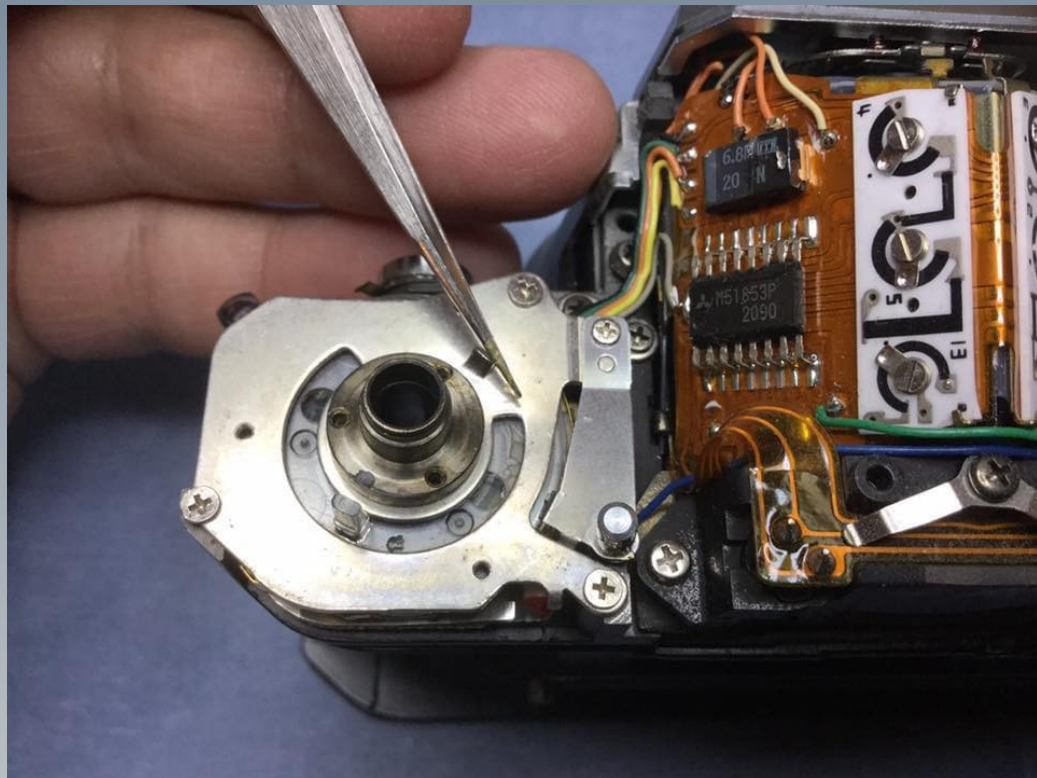
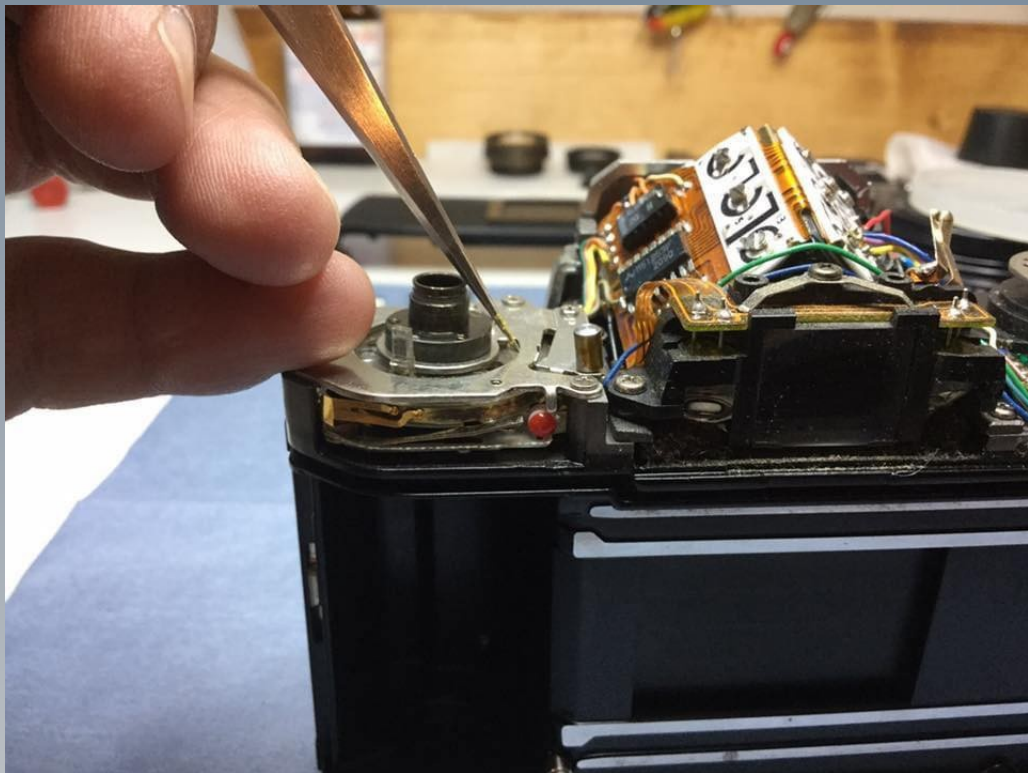
The next step is obviously going to be to check the FRE, it's coupled to a spring loaded return gear below the assembly - this spring loaded gear is cord coupled to the aperture control ring I just inspected and found to be OK.

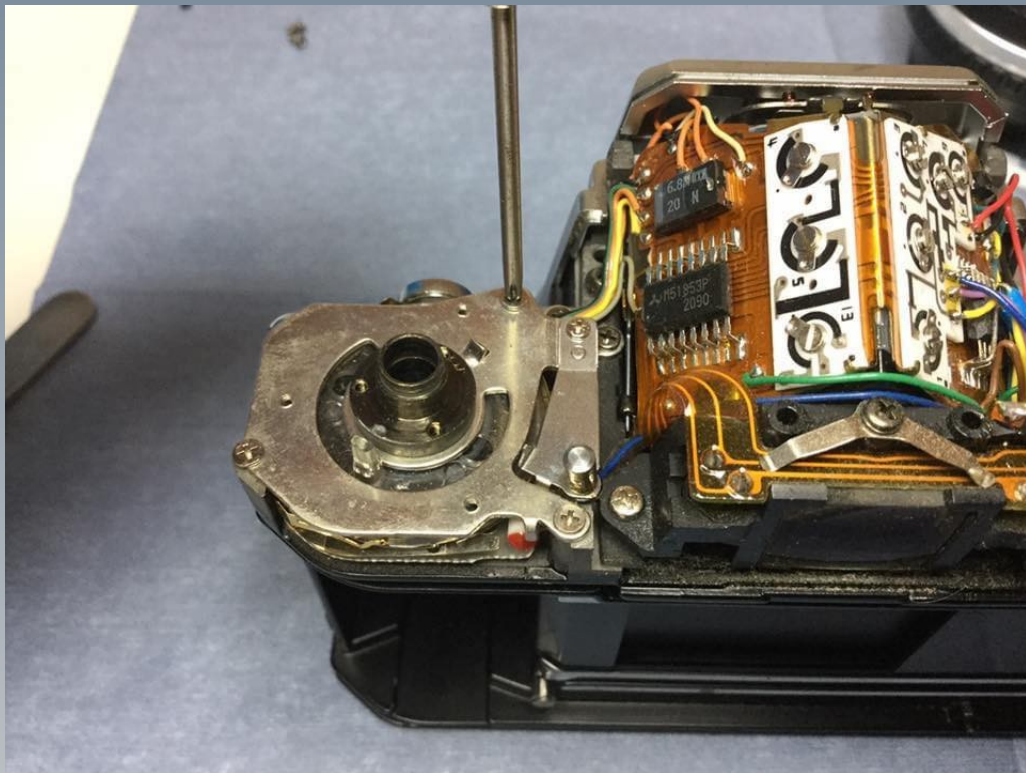
Almost immediately I noticed the metal housing for the FRE is slightly bent downward - noted in the photos with tweezer points. Remove the three screws and lift off the FRE for a closer inspection.

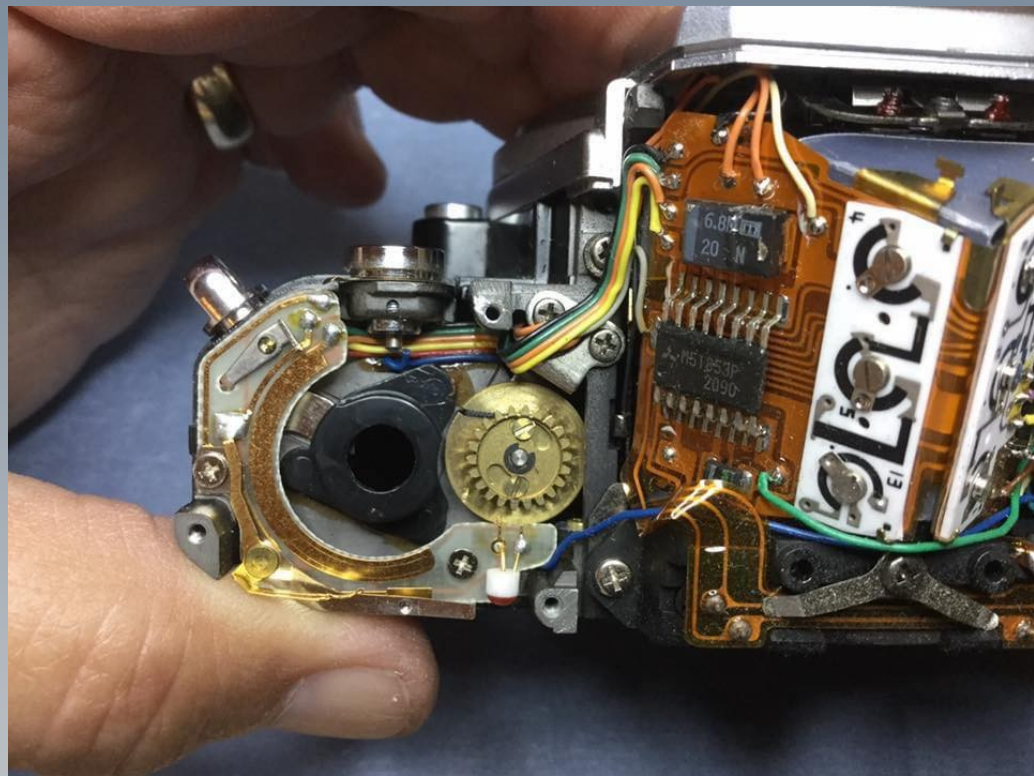
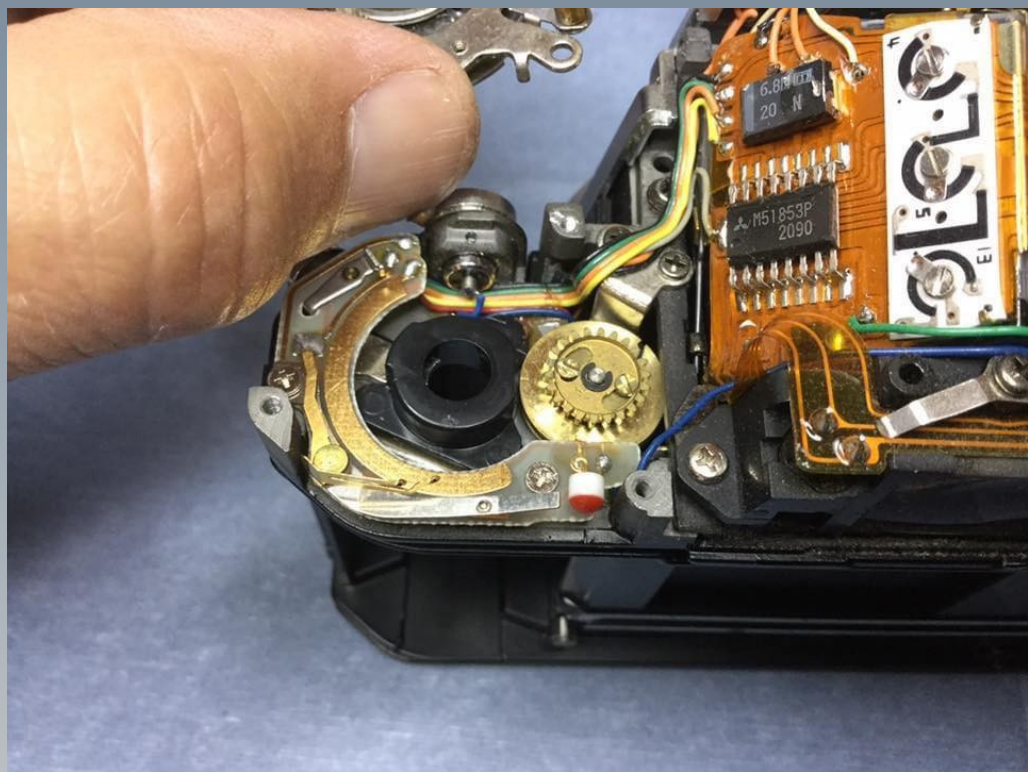
With the FRE assembly removed the aperture control ring now moves freely - the damaged FRE is binding instead of turning freely and hangs up - turning it over and inspecting the FRE with a magnifier I found the glass resistance dial broken - the part is NLA (no longer available) from Nikon ... I do have several parts cameras, I'll have to find a good used FRE (the FRE from Nikon was a very expensive part). I disassembled the FRE to show the broken resistance element, this part originally only came as an assembly. If you look carefully you can see the cracks.

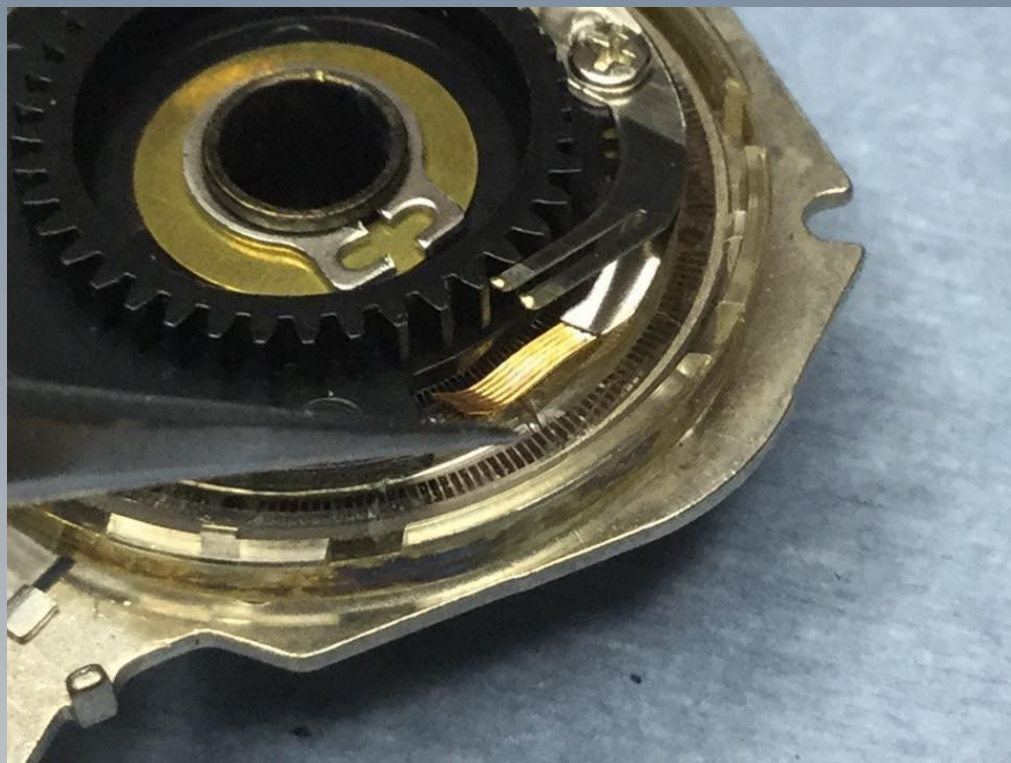
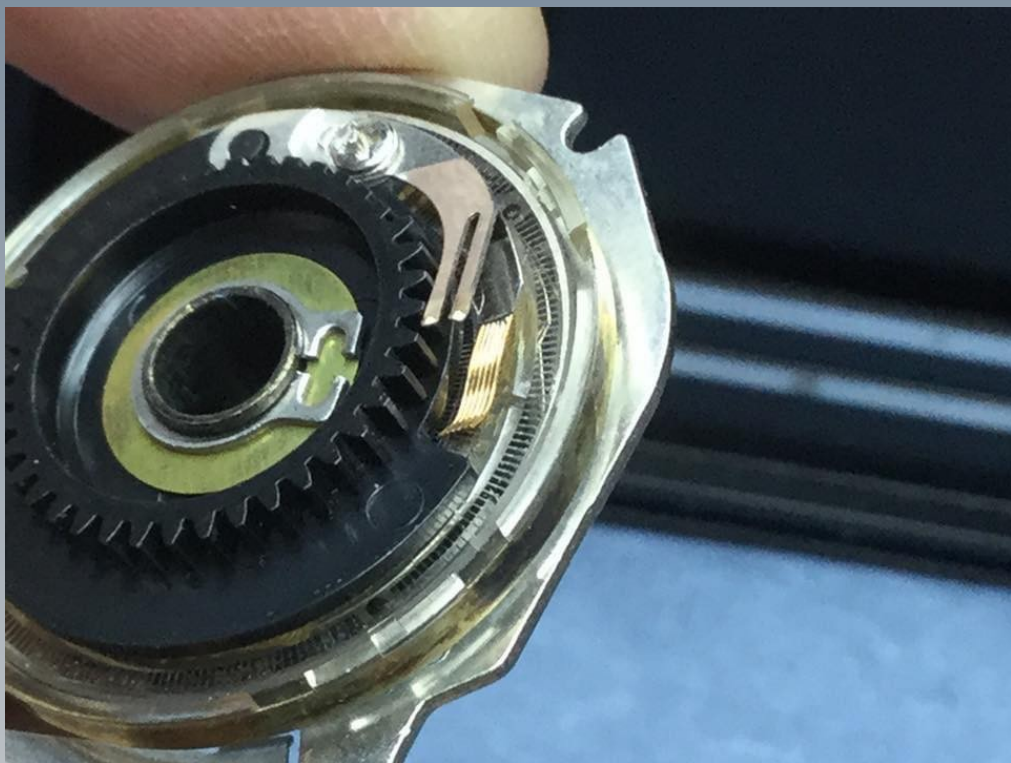
So ... I've been able to determine the camera was dropped with the rewind knob extended from the body - the impact hit the knob and the shaft being a strong part bent the FRE housing and broke the FRE dial...

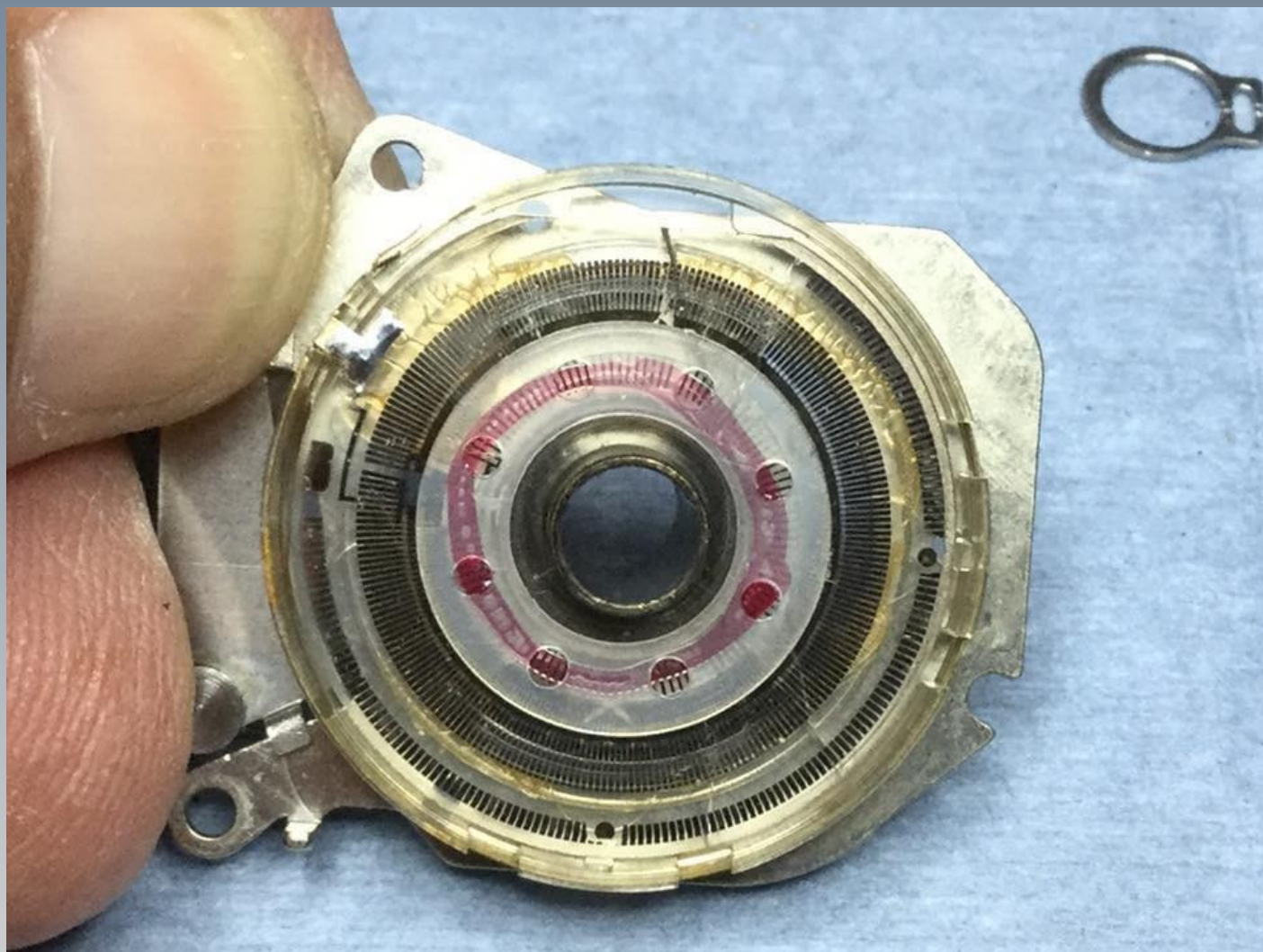












Post #10

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After cleaning and replacing the broken FRE, making all the required adjustments, and finally changing the light seals reassembly is simply the reverse of disassembly.

For more information download the Nikon FE Service Manual from the website.

This brief series was just part of a three camera repair job -

