

**Horologix**



The place to come for all your Bulle and Eureka restoration parts.

Contact Peter Smith  
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[Email peter\\_smith@horologix.com](mailto:peter_smith@horologix.com)

Eureka Clock Serial Number 4440

## *Restoration of Eureka Clock Serial Number 4440*

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***Photos by kind permission of the owner.***

*A short Eureka movement from an enclosed case (retained by the owner). The owner has asked for a new securing bar as only one came with the clock. The existing bar is shown on the left of the photos. The cap is the inspection cap from the rear of the case.. The overall impression is that the clock is in good order with no missing parts, albeit a little dirty.*

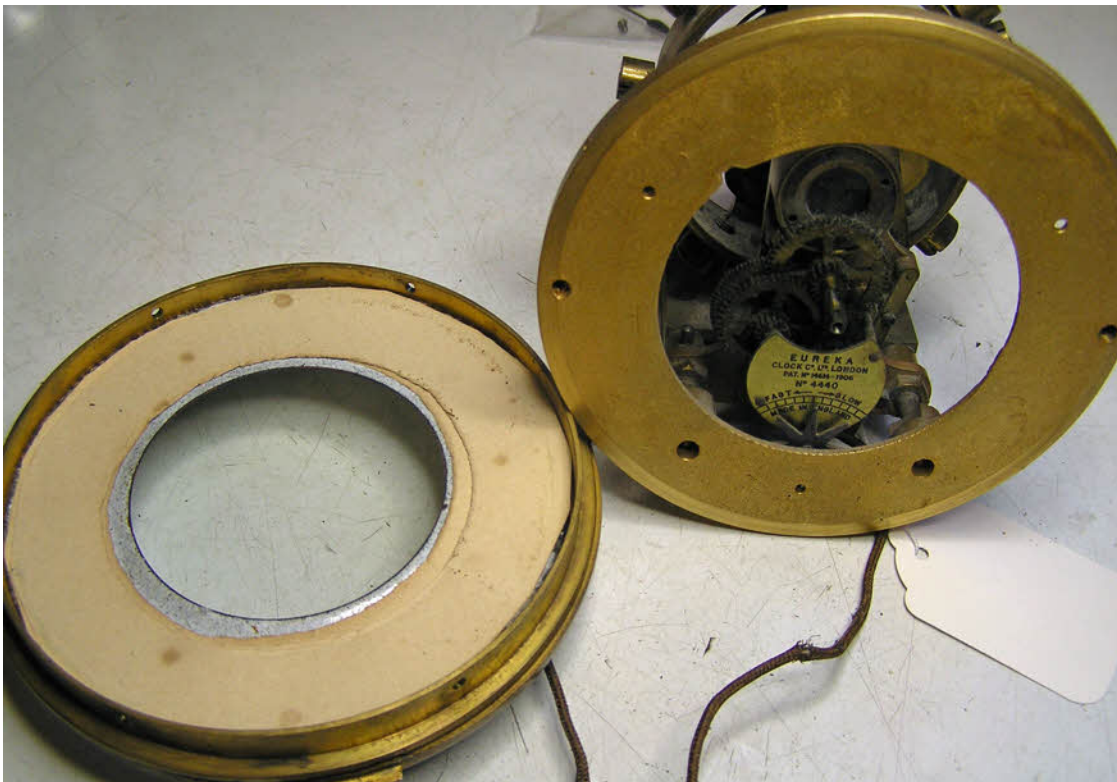
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*Views of the move-  
ment showing no  
great problems oth-  
er than the dirt.*

*The last photo  
shows the dial re-  
moved and the card  
placed between it  
and the cast back  
plate.. Although the  
back plate has three  
holes to secure the  
dial as normal, the  
dial itself (next  
page) does not have  
the usual pins pro-  
truding from the  
back. The move-  
ment is secured to  
the case with two  
long bolts screwed  
into this backplate.*

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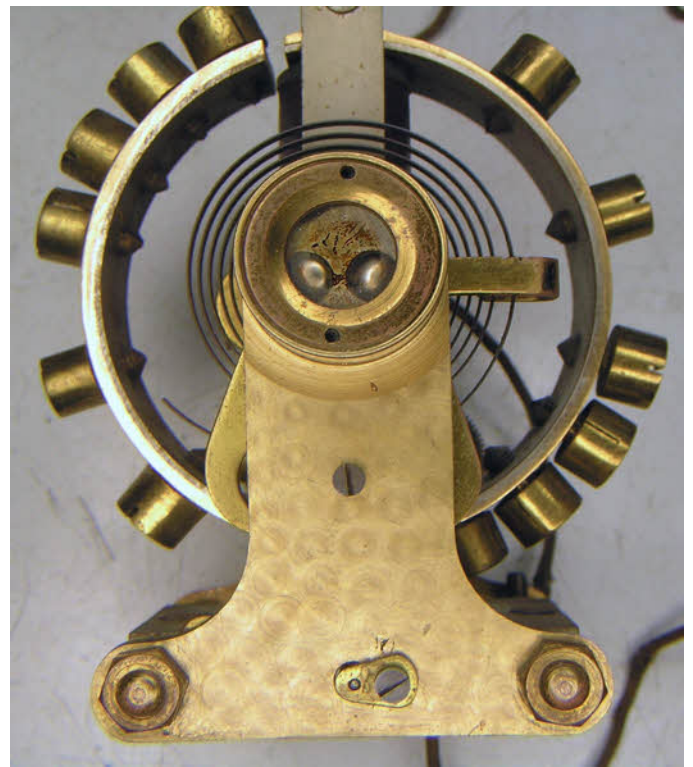
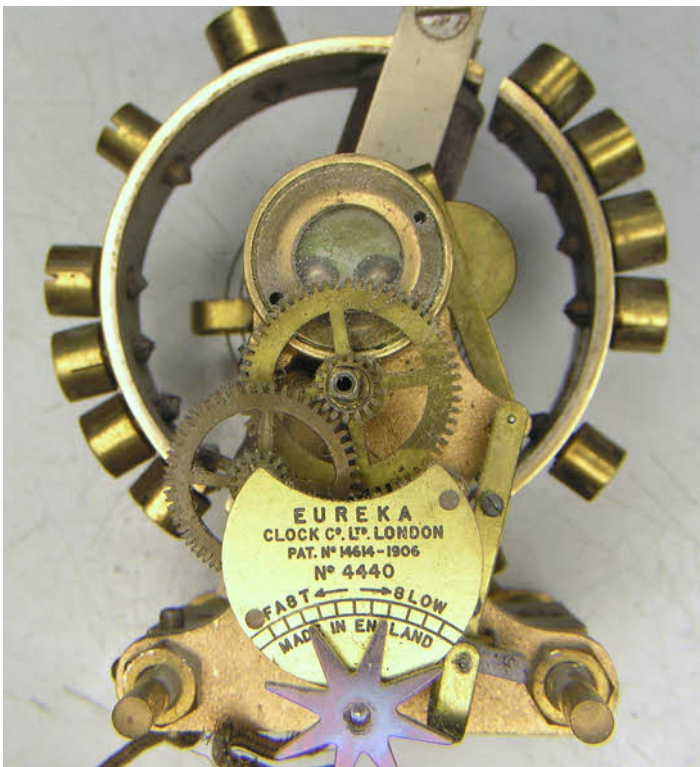
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*The dial front and back. It is in near perfect condition with just some dirt and grime around the edges which is easily cleaned with warm soapy water.*



*The front and rear bearing housings. Both look good with no chipped glass. Note this is a two ball movement with hardened shim plates that take the thrust of the pivots.*

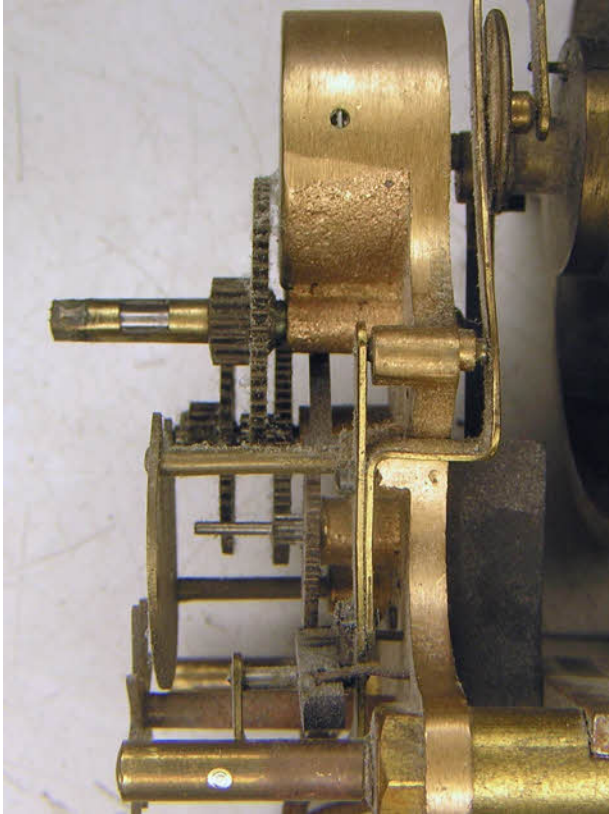
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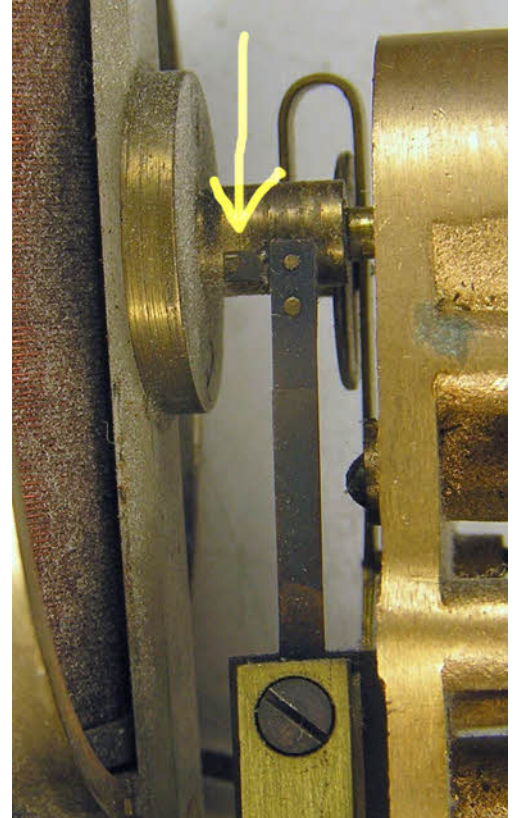
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*The wheel work and impulse arm shown in the photo at left are all OK. This particular arm is mad from two separate pieces of press brass screwed together. Some are made from a single piece of brass that is pressed and bent to shape. The arrow shows the slightly worn silver flag. This will be replaced.*



*This last photo shows the underside of the movement and the wiring which is just about to fall apart. All the wiring will be replaced with new cloth covered wire.*

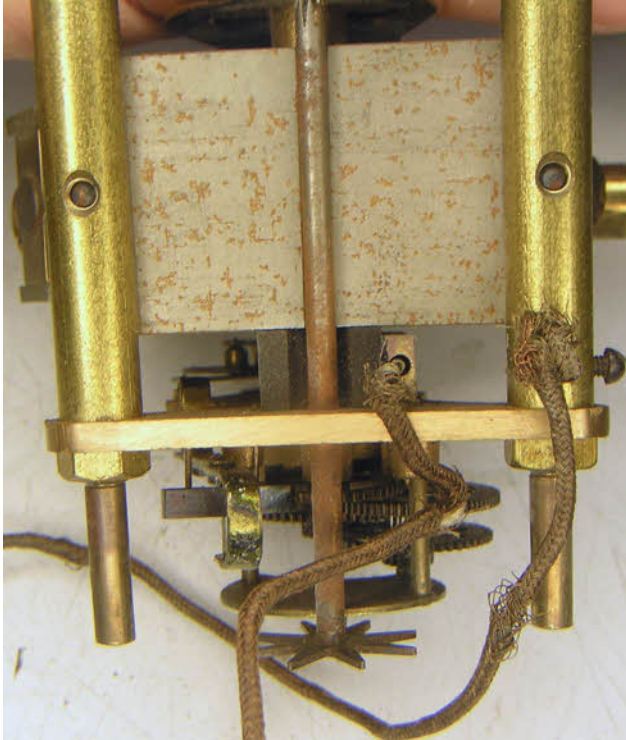
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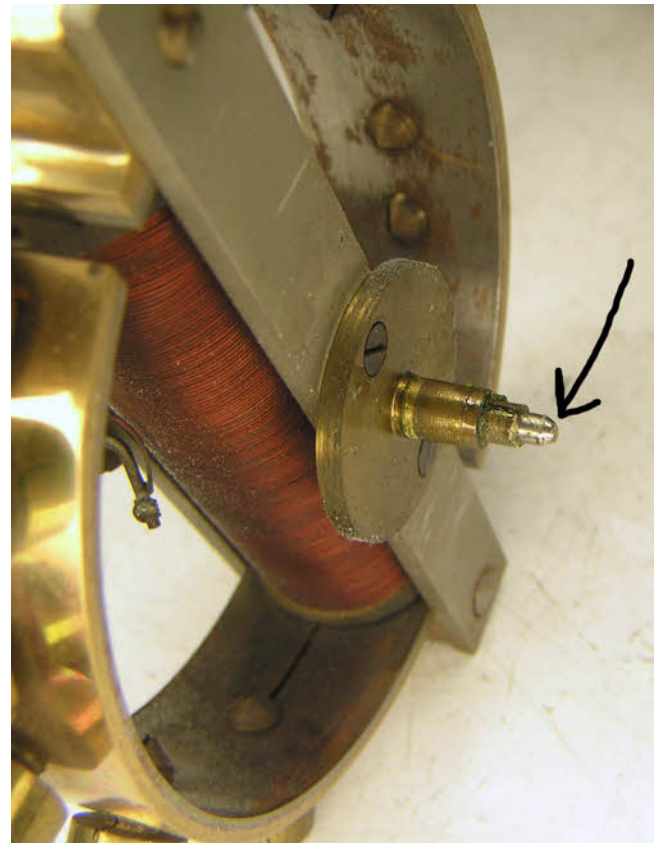
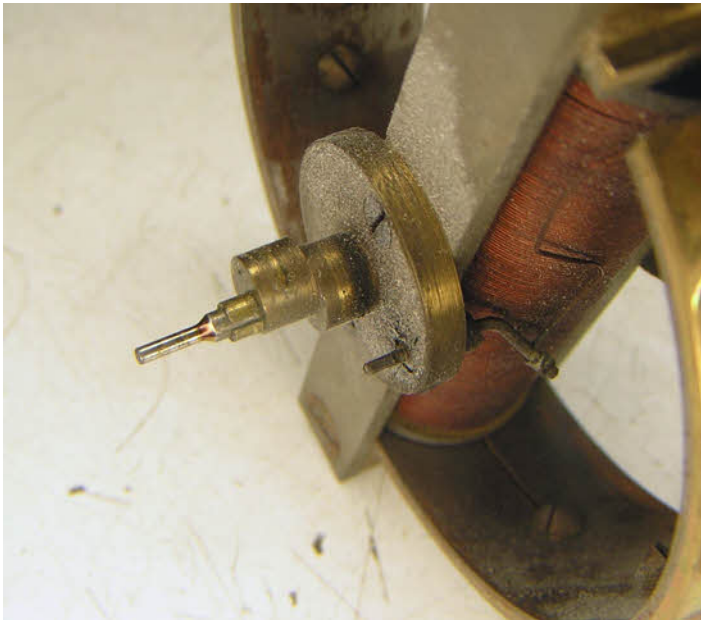
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*The underside again showing the rusted arbour of the balance spring star wheel adjuster. It should clean up well, as will the underside of the base plate. This base plate is the short version with no extension with bolt holes. This short version has no need of bolts to hold it down as the movement is held in place by the lobg bolts shown earlier. Further evidence that this movement is from a cased clock rather than one under a dome or in a four glass case.*



*Oh dear! This is bad news. The photo on the right shows that the rear pivot has snapped, which would have stopped the clock dead. The front pivot shown above looks good and unworn. The brown mark is dried oil. I will need to make a new pivot.*

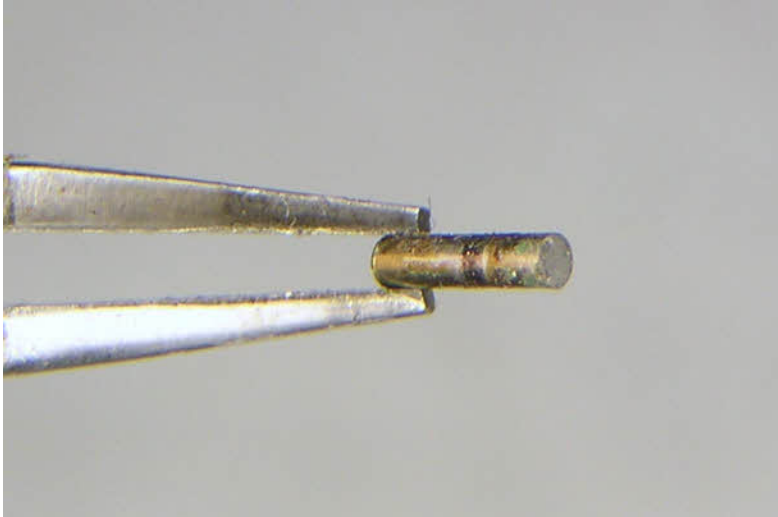
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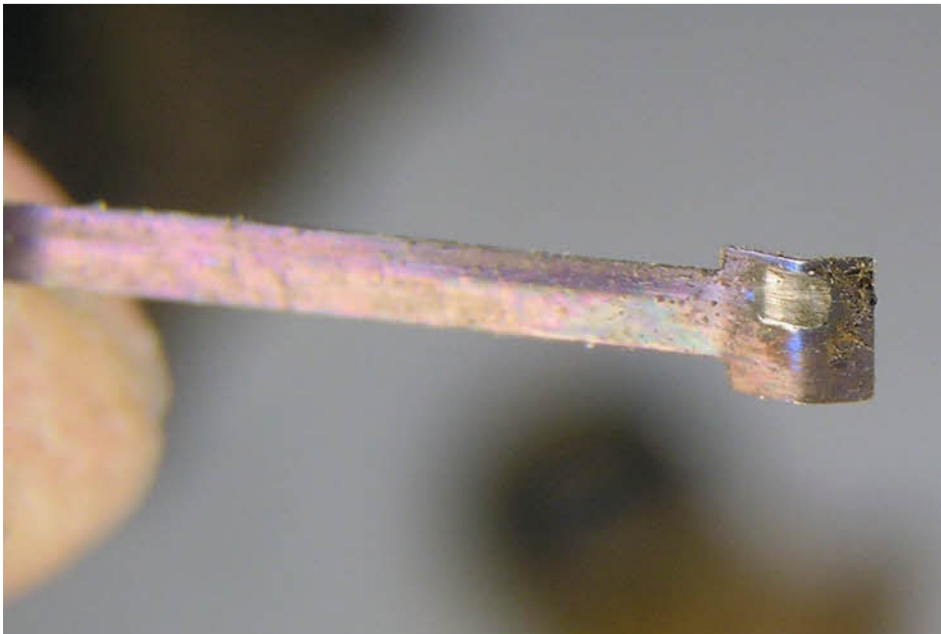
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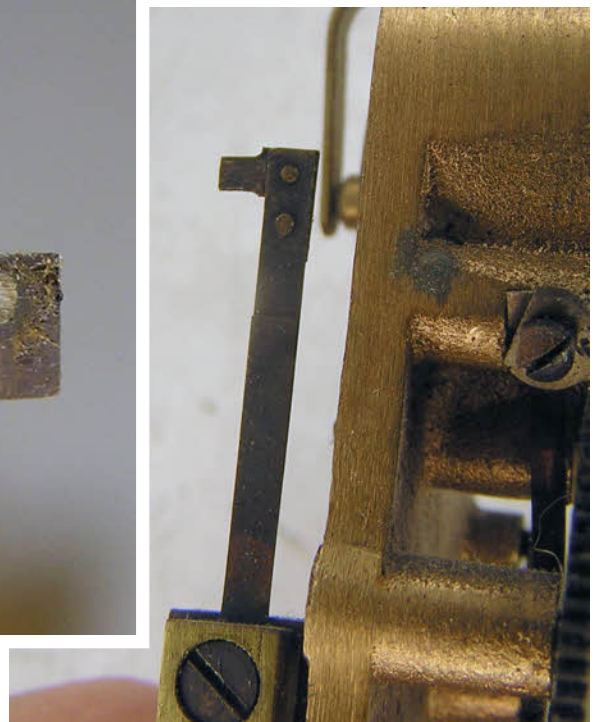


*The broken pivot and housing. It should be a simple matter of setting up the clockmakers stake and driving out the broken pivot and driving in the new one when made.*

*I found the other half of the broken pivot sitting quietly in the rear bearing housing. Nice clean snap. I wonder if the clock was dropped or had some traumatic blow? But there is no other damage to the clock so it must just have been metal fatigue.*



*This photo above shows the worn detent spring that acts upon the count wheel to stop it returning when moved forward one tooth by the impulse arm. It is worn approx 70% the way through and I will need to sort it out. I find the best way is to soft solder a new piece of spring steel over the wear rather than replace the whole spring*



*A close up of the worn flag with about 25% missing.*

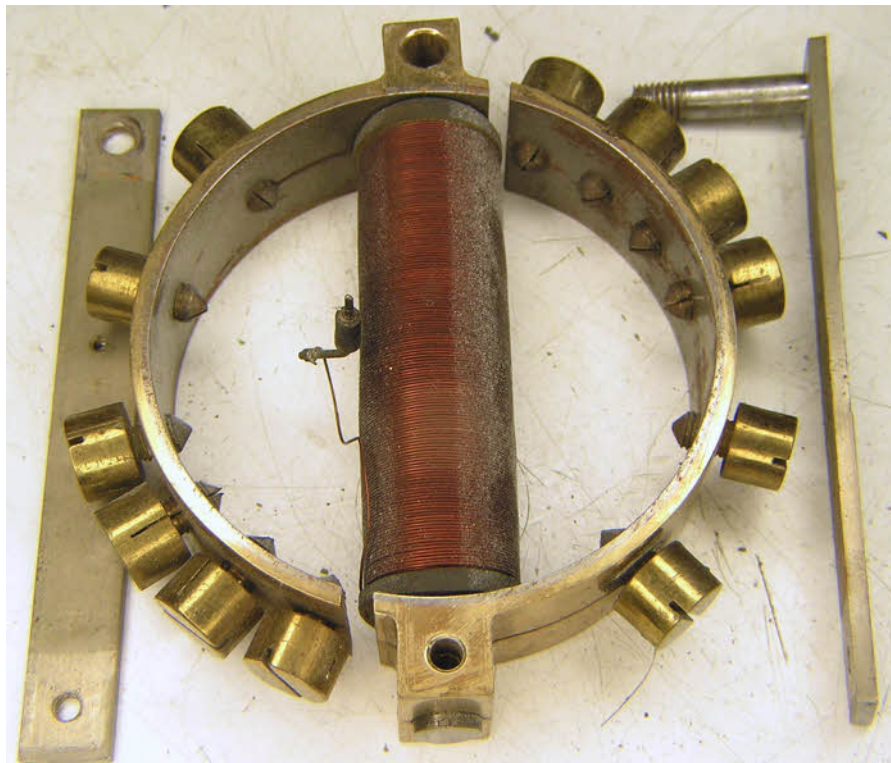
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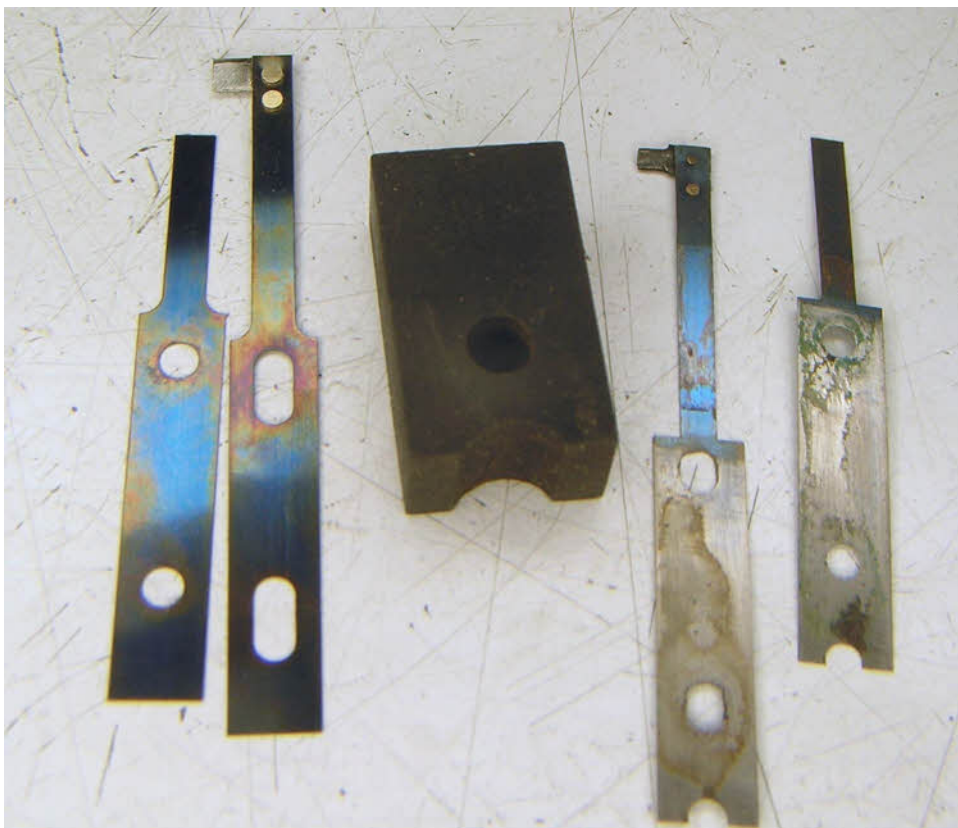
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Above shows the balance wheel partially disassembled. A good time to check the resistance of the coil which should be approx 20 Ohms

The photo on the top left shows the two part impulse arm.

The photo to the left shows the new flag and buffer spring on the far right with the original on the near right. The fibre block is in good condition with good mounting holes. You sometimes find that the screws that secure the springs to the fibre block have been turned up to tight and the threads have been stripped inside. Then its a case of making a new block or sometimes you can get away with filling the holes with black epoxy and then drilling and re-threading.





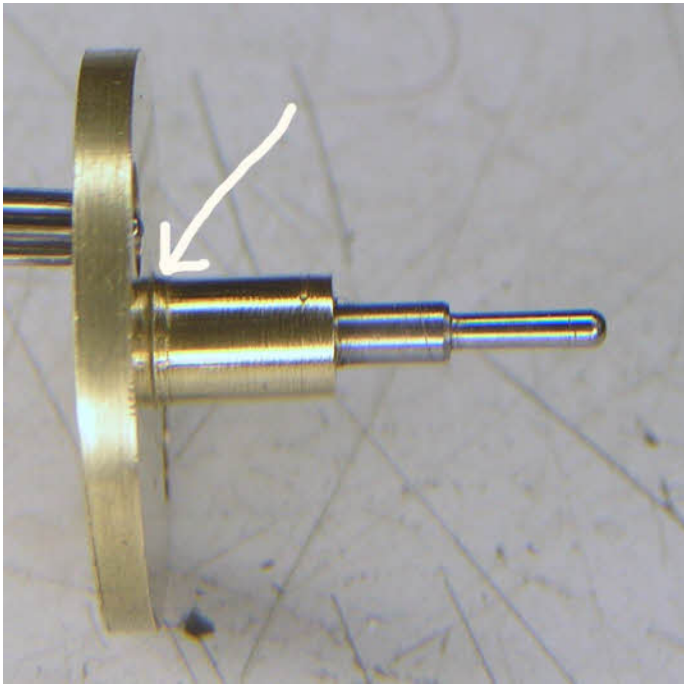
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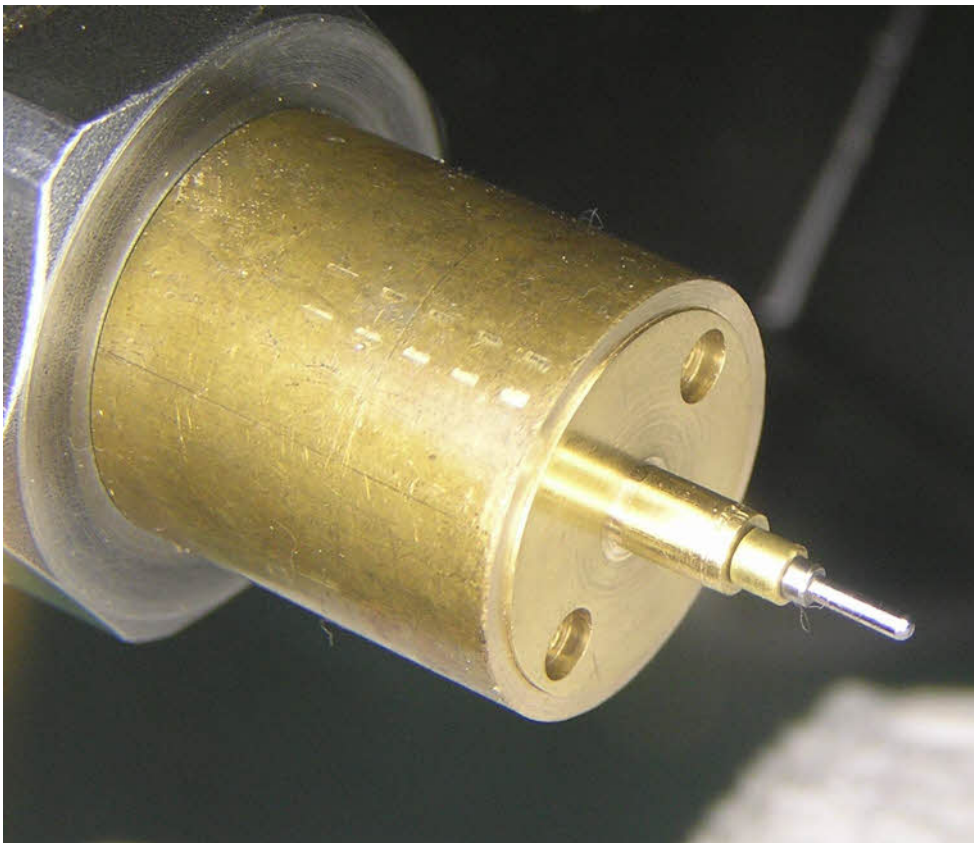
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These photos above show the new pivot secured into the rear pivot housing.



*When I tried to assemble the balance spring onto the housing, I noticed that it would not sit correctly and saw that there was a slight lip evident at the back of the housing as arrowed above. So I turned a piece of brass in the lathe to accept the whole housing and turned the ridge off with a sharp tool.*

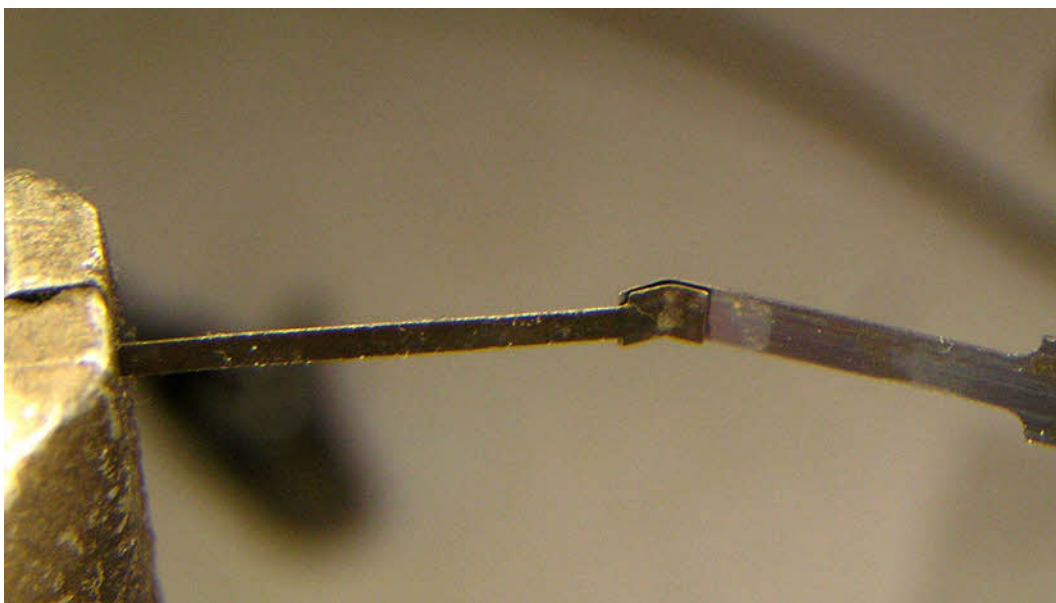
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*Using a set of "Helping Hands" to set the new piece of blued steel to repair the wear in the spring. I used .004" blued steel offcut from a buffer spring. I then bent it at the same angle of the original. The photo on the left shows the new piece behind the original ready for soldering. Both have been cleaned and degreased before soldering.*

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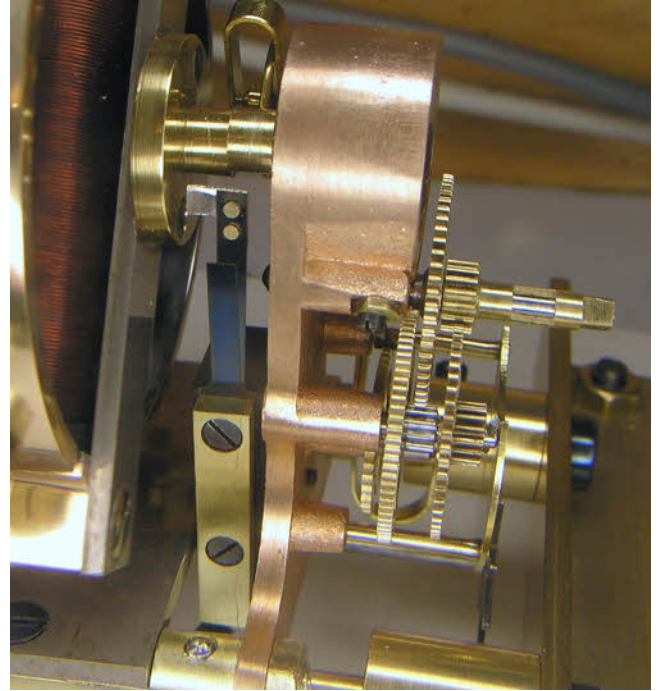
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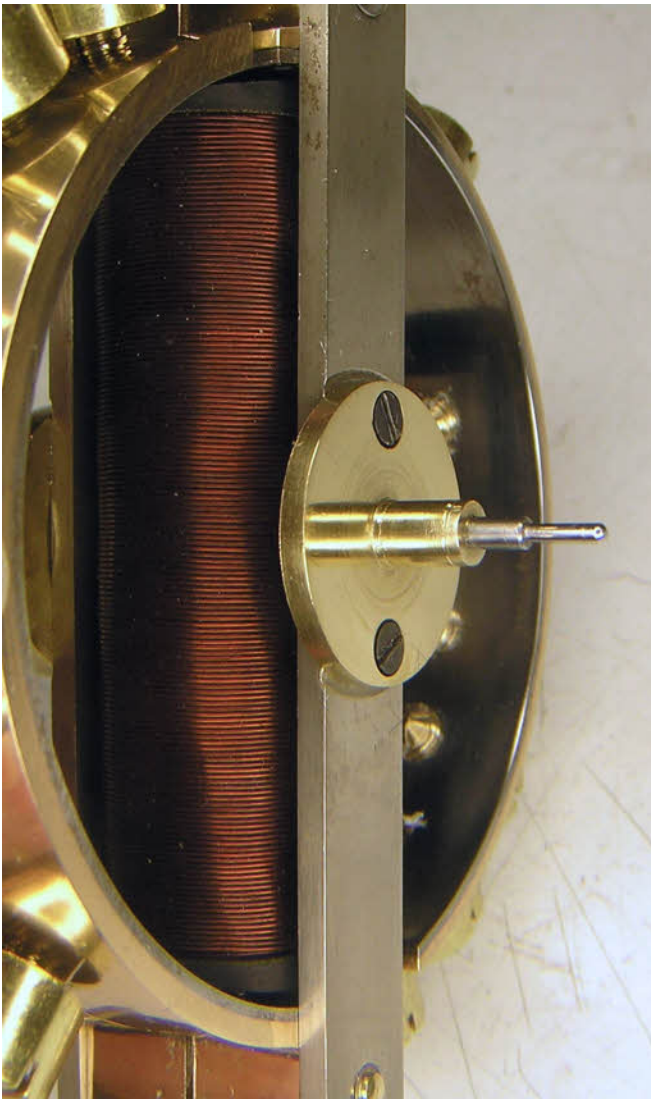
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*The spring with the new piece soldered in place ready for grinding the side flush. This is a neat repair and saves as much of the original as possible.*



*These last photos show the movement finished and ready for testing and the new pivot and machined housing back in situ on the balance wheel*



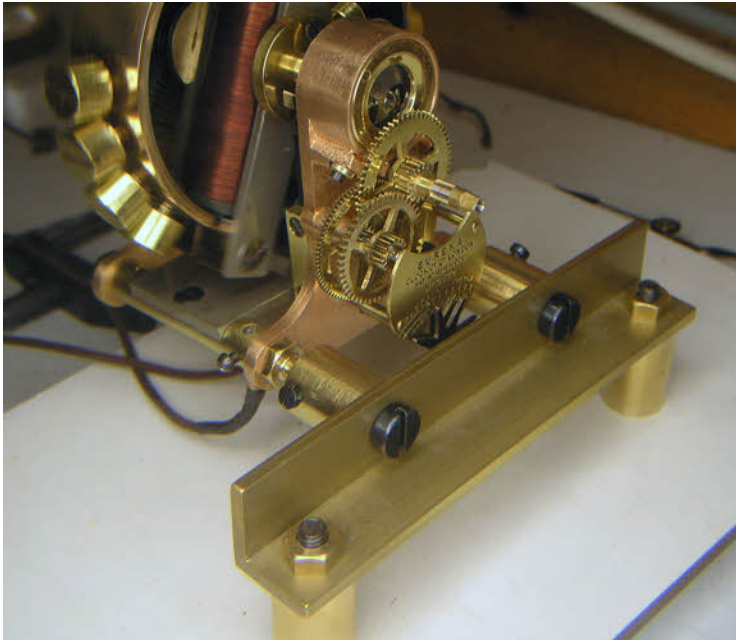
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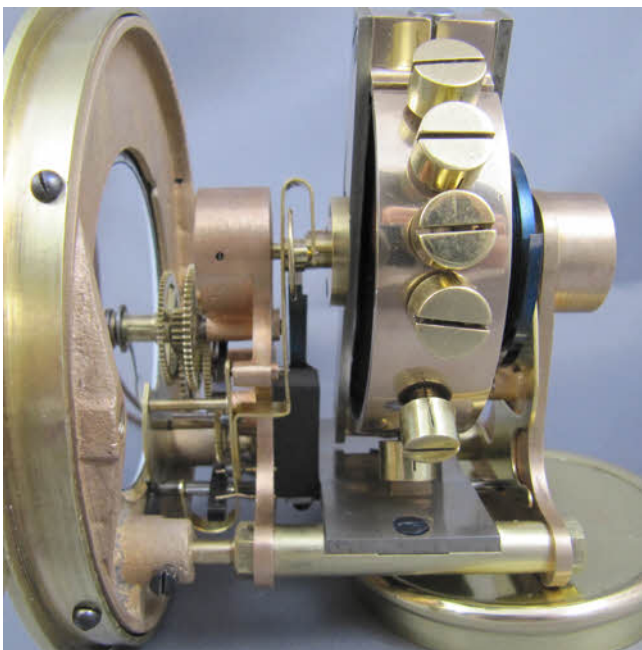
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*The movement on the test bench*



*Right side view of the finished clock.*



*Left side view of the finished clock.*



*The finished Clock*