

**Bulle Clock Serial Number 5937**

*Restoration of Bulle Clock  
Serial Number 5937.*

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# Horologix

Early Battery Clock Parts & Restoration

## Bulle Clock Serial Number 5937



*This pair of clocks is unusual in that the serial numbers are within 30 of each other and they are exactly the same model. In fact there are no discernable differences in these two clocks which allows us to the rare opportunity to say that the features seen are all original. Before I acquired the second clock I had thought that the hands were replacements being cut down from a taller clock. But that is obviously not the case as both are clocks are the same.. Both clocks date from the first year of manufacture.*

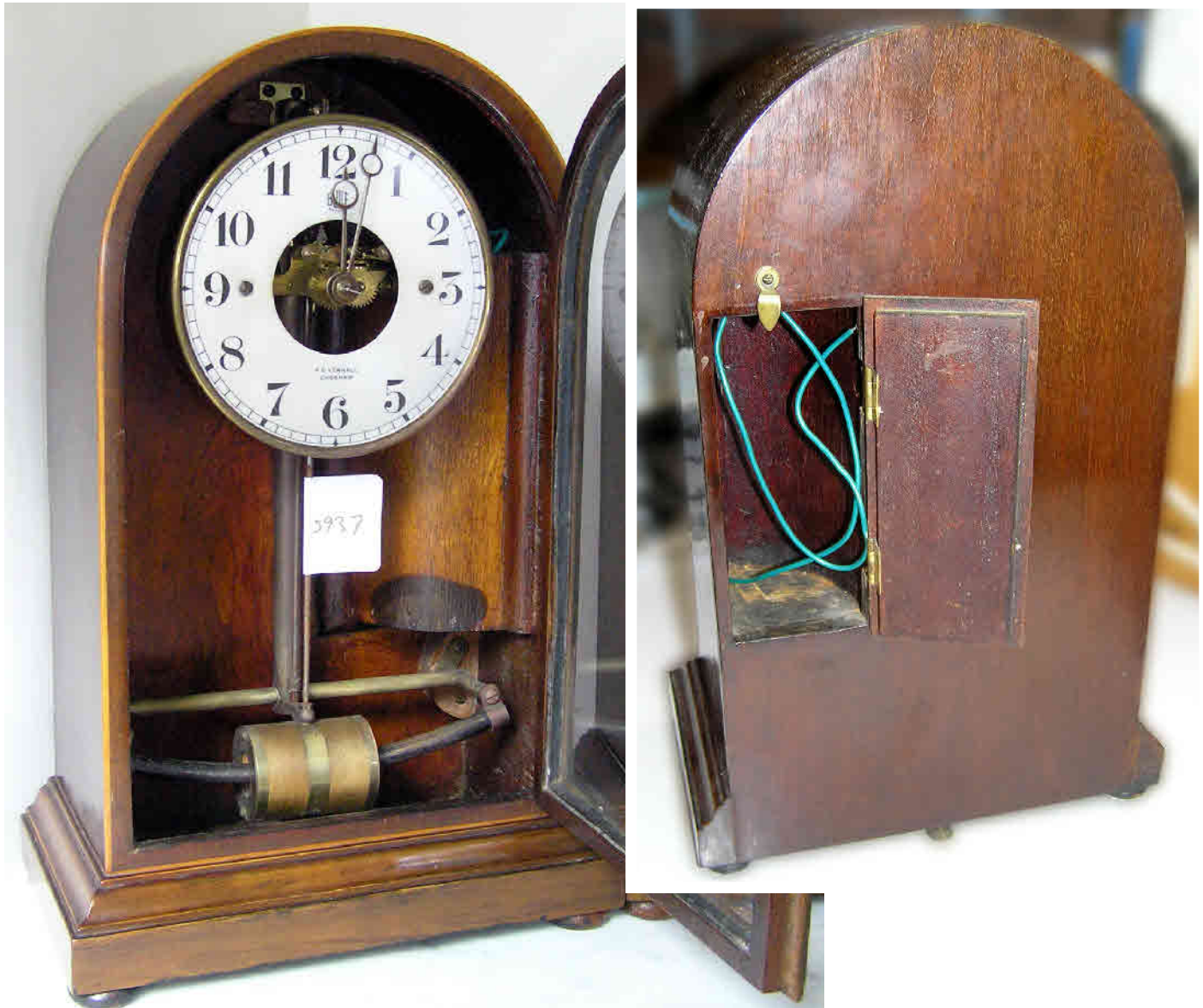
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*The restoration will be of serial number 5937. The clock looks to be complete with little damage if any. It is obvious that the wiring has been changed at some time though. The battery compartment looks generally clean and free from any acid damage.*

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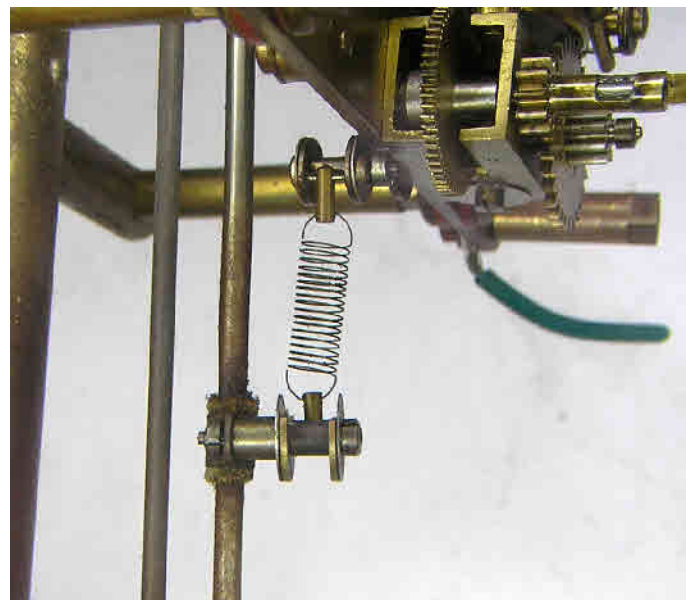
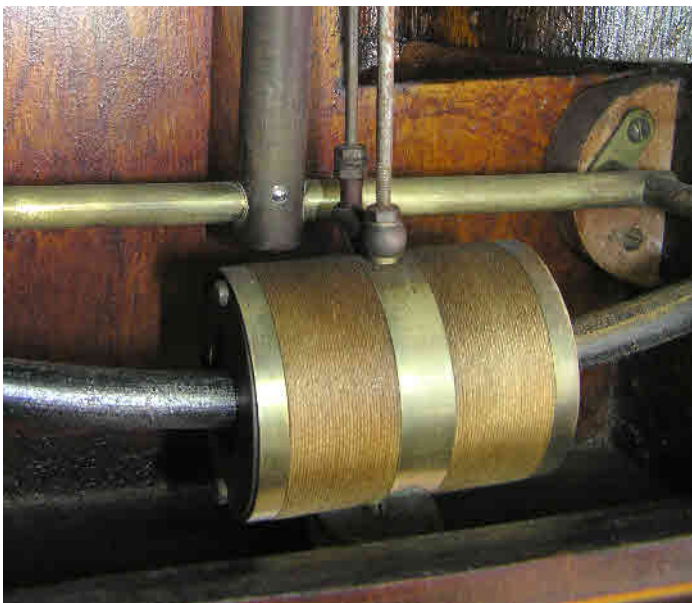
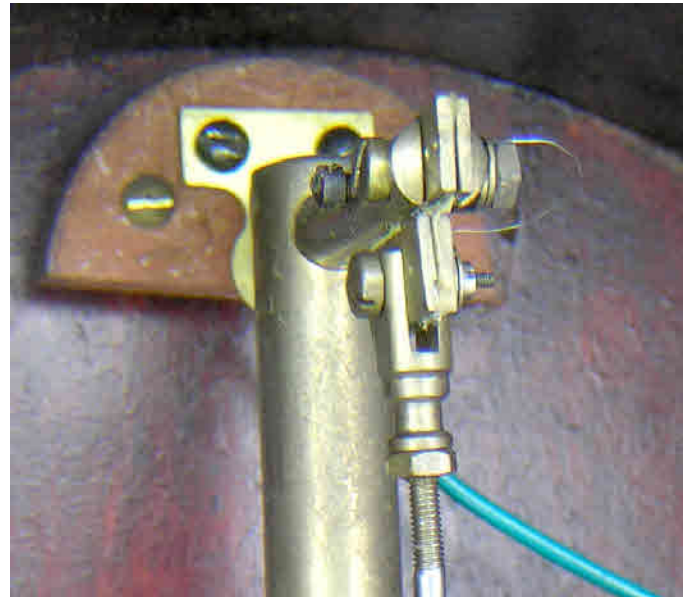


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*This all looks promising. All the parts are original with nothing missing. A good clean clock. Even the Isochron spring is still in place and unstretched.*

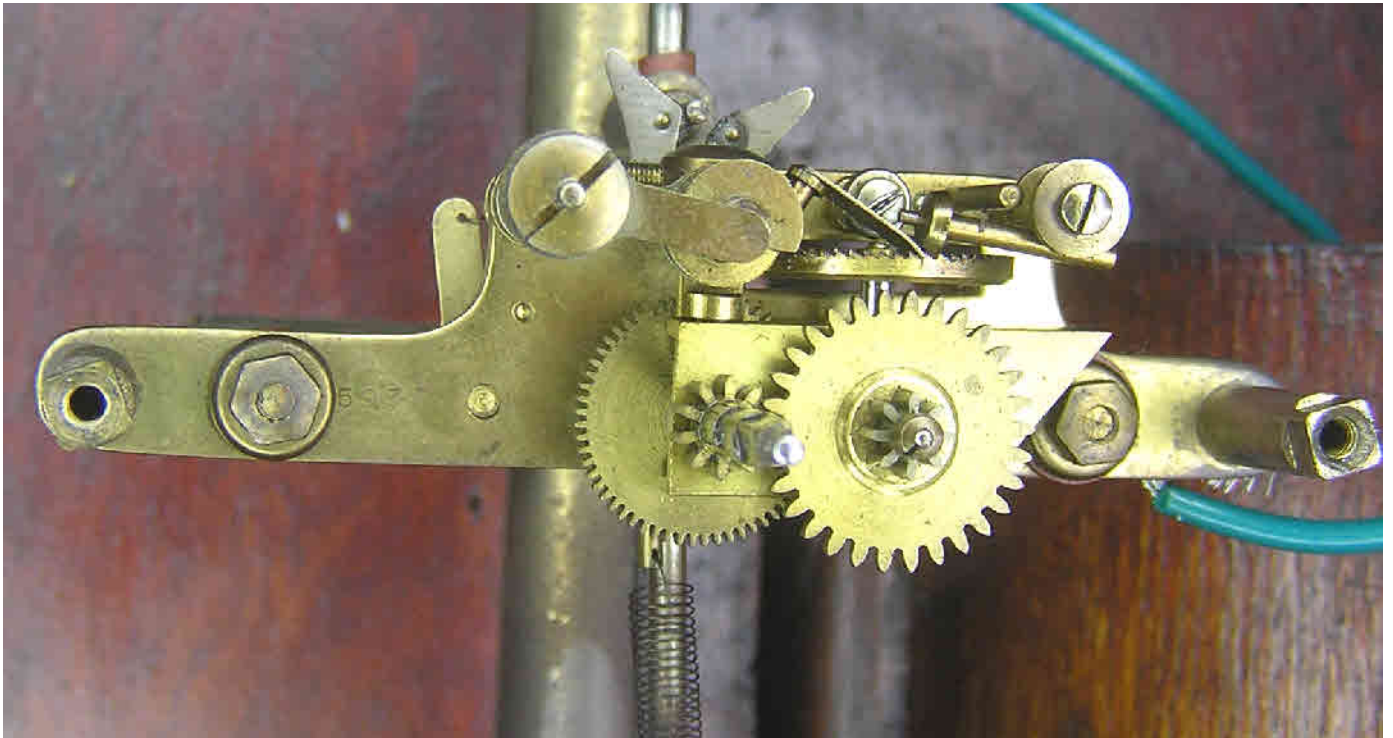
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*Well, I was going to say that this was going to be an easy restoration but look at the fork arbour in the photo on the left! I thought it felt a bit wobbly when I removed it from the movement above. But it just fell apart when it was out. But it's not that bad. It will just need re-riveting in place. This may very well explain the fact that this clock had a very weak action when it was tested when first acquired. The arbour is integral to the circuit and must have a good contact with the silver fork contact.*

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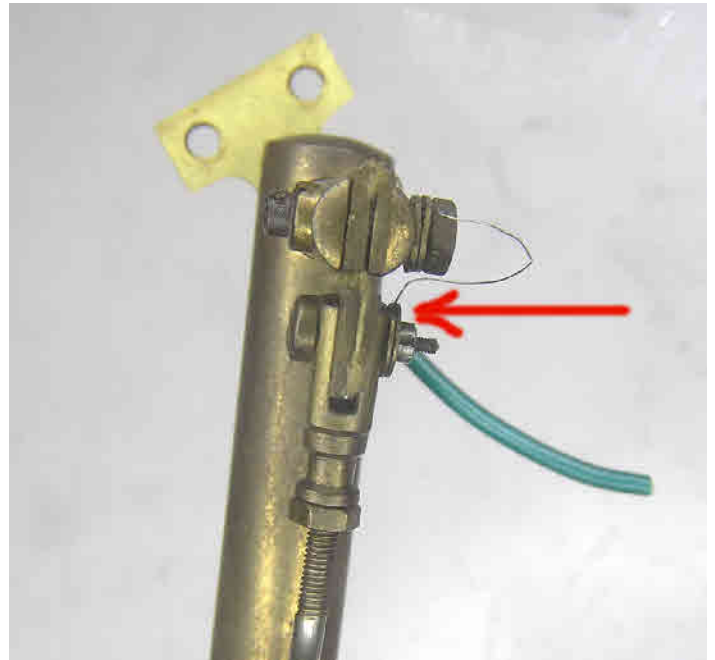
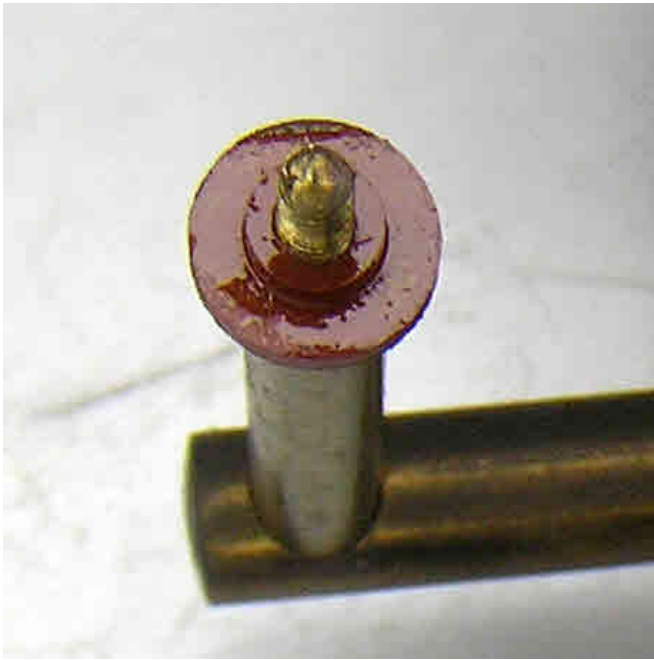


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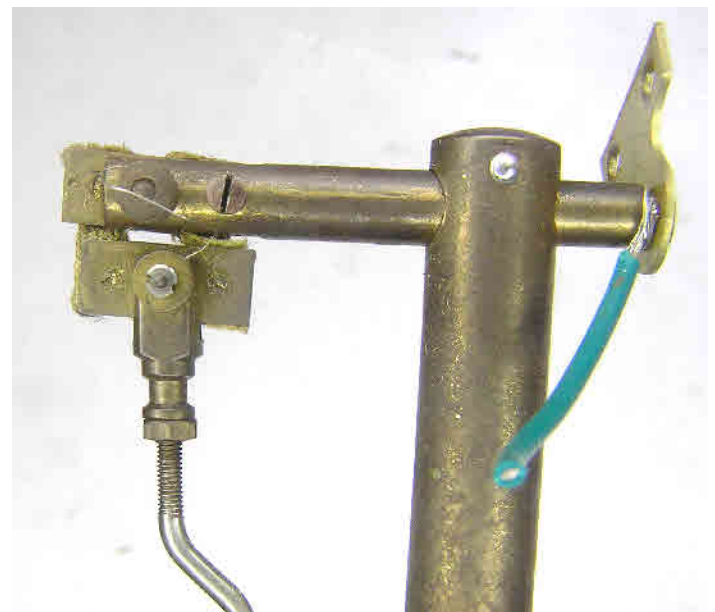
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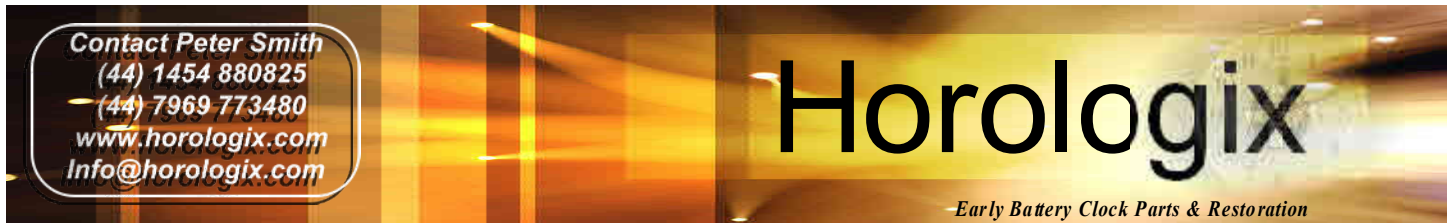
The photo at top left shows the state of the fibre insulating movement washers. They are impregnated with oil. The fibre is absolutely awash with the stuff and I will probably replace them.

The next photo shows where the pendulum contact wire was connected. This is the worst position to connect it as the bolt at the top of the pendulum should be free to turn and slide. This enables the pendulum to find it's best position if the clock is placed on an un-level surface. This means that the bolt will be loose in the silk suspension and the assembly at the top of the pendulum. I will connect it lower down between the nut and assembly.

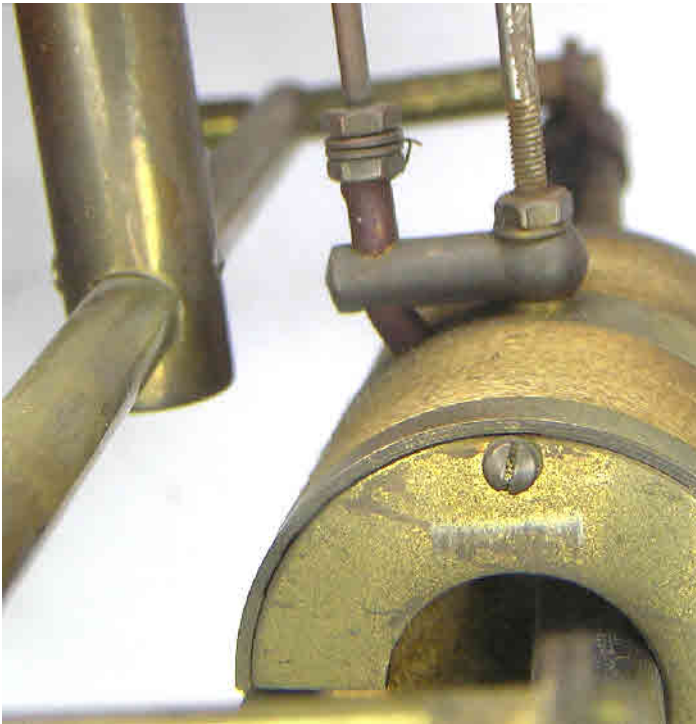
The final photo shows the state of the suspension unit which will also be replaced .



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*This photo above shows the coil assembly and the original insulating tube as it exits the bob casing. After 70 years or so this insulating tube is as brittle as a dry biscuit. One touch and it will fall apart. It is impossible to remove it from the assembly in one piece and replace it. So I know that it has never been apart. The photos on the right show the new fork contacts in place and the method of riveting the fork back on the arbour. I used one punch with a hole that was larger than the bush on the arbour that allowed me to push the fork on. Then I used one with a hole just slightly larger than the arbour which allowed me to punch down on the bush thereby expanding it to be a tight fit in the fork hole. I then tested it for strength and electrical continuity.*



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*This sequence of photos show the pendulum bob that has been cleaned whilst still keeping the original cord intact. This takes a lot longer but can be done if the cord is in a good condition. The magnet has been re-magnetised, cleaned and "Grate Blacked". The frame is then shown on a test stand with the pendulum assembly attached for testing lengths and clearances.*

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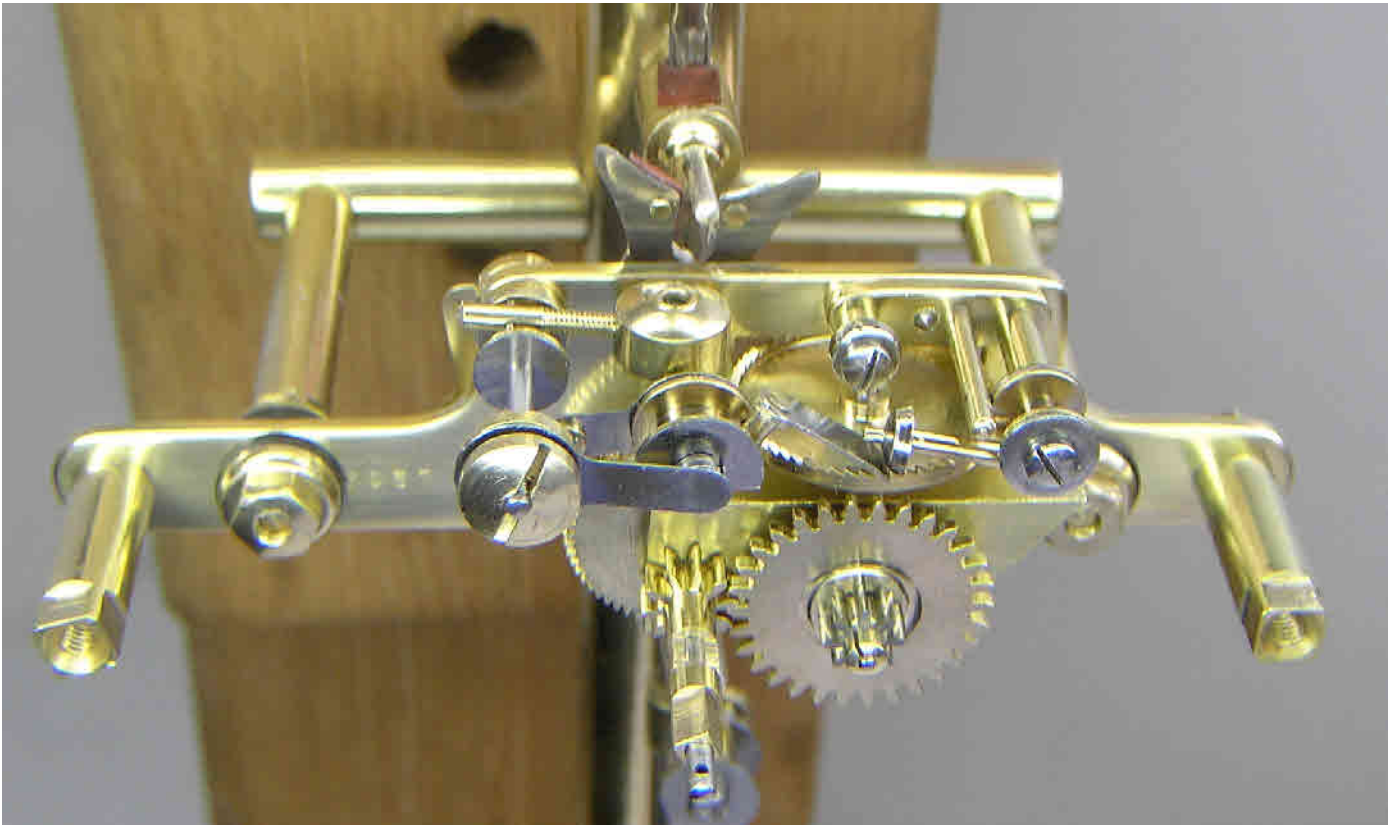


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*The movement back in position on the main clock frame. The damper arm has been refilled with new cord and oiled. All steelwork has been cleaned and polished. The action of the pawls has been tested so that only one tooth is gathered at a time. The depth of the pin in the fork has been adjusted to suite this action. What you are aiming for is one tooth to be pushed and gathered over as much of the pendulum amplitude as possible. If you increase the pin depth then the impulse will occur with the minimum of swing but it will probably gather two teeth when it reaches 2/3rds of it's swing. If the pin is raised then it may then gather only one tooth at the higher amplitude and not gather any teeth at less than a third of the swing.. You have to adjust it to the best compromise.*

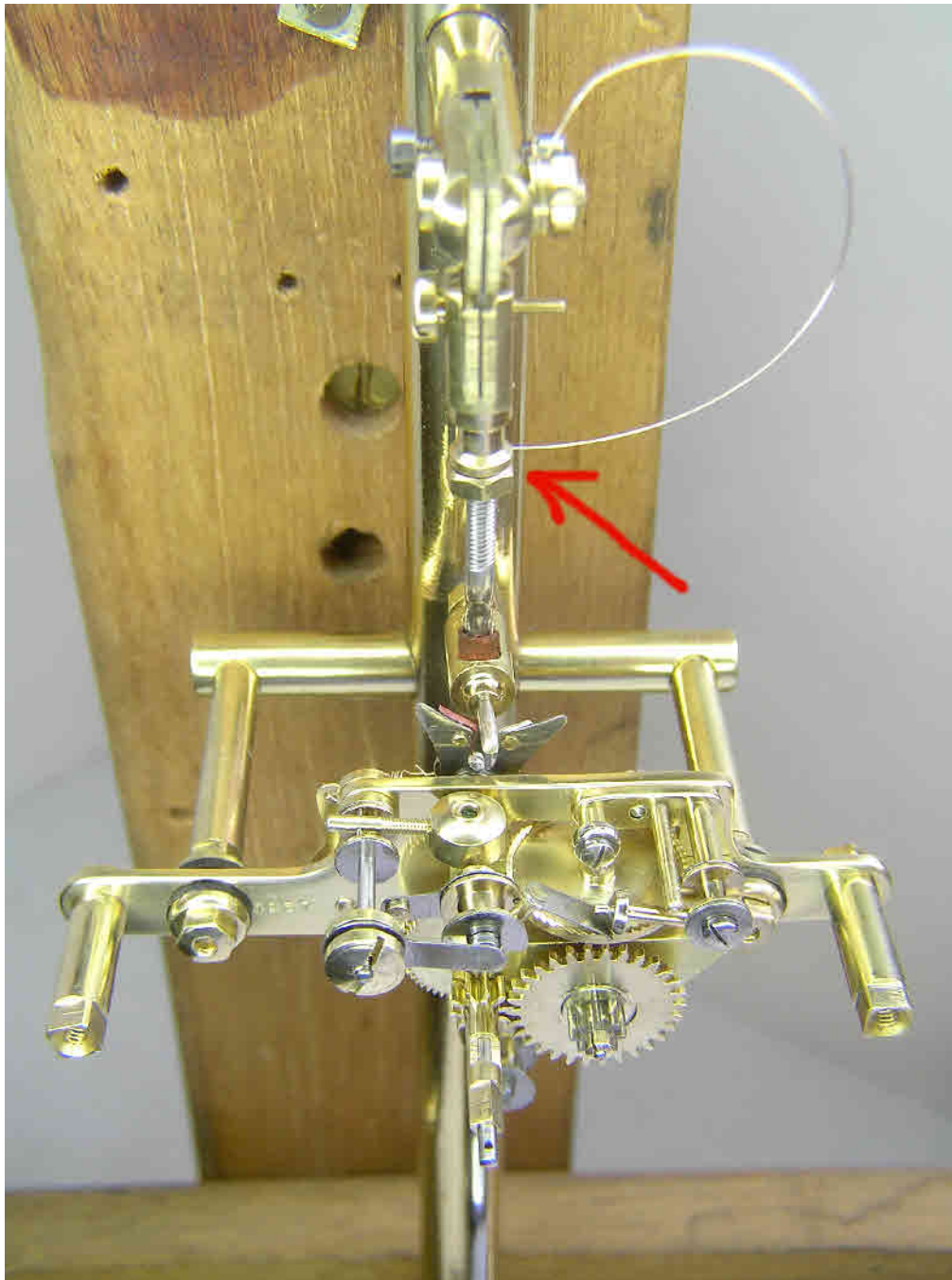
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*The frame, pendulum and movement all in place. Note that I secured the contact wire to the pendulum using the nut that secures the suspension assembly in place. The wire is now firmly attached at both ends and is a much more reliable contact.. I can now screw the nut on the bolt attaching the pendulum to the suspension and test the electrical continuity for the whole circuit. The best way is to attach a meter to both ends of the battery holder and read of the resistance whilst holding the silver contact side of the fork against the contact pin. This should then read the resistance of the coil within a couple of Ohms. You will need to keep the pendulum still otherwise the readings will fluctuate because the movement of the coil over the magnet will induce a voltage and affect your reading.*

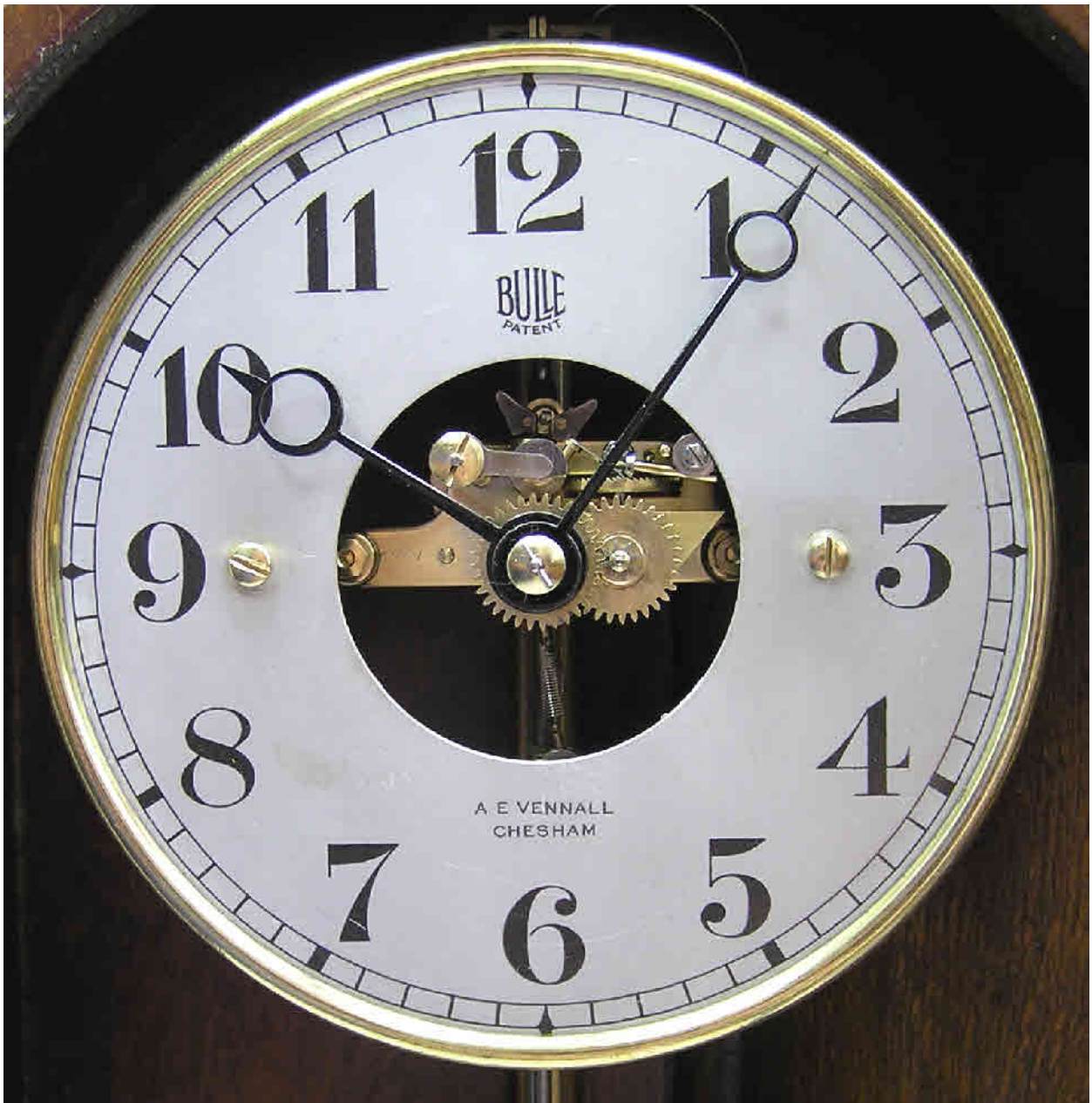
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*The hands and dial in place. The dial surround was cleaned in the usual way by covering the face with brass shim cut to size. Finally the dial was washed in clean soapy water.*

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*The clock replaced in the case ready for fixing on the door. The back of the clock is shown with the battery door in place. The whole case was in good condition and only needed a good buffing with beeswax polish.*

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*The case has had all the brass work removed, cleaned and polished. The glass is thick and bevelled and runs the whole length of the case to show off the movement to great effect.*

### **The Finished Clock.**

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