

Bulle Clock Serial Number 57561.

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Contact Peter Smith
 (44) 1454 880825
 (44) 7969 773480
 www.horologix.com
 info@horologix.com

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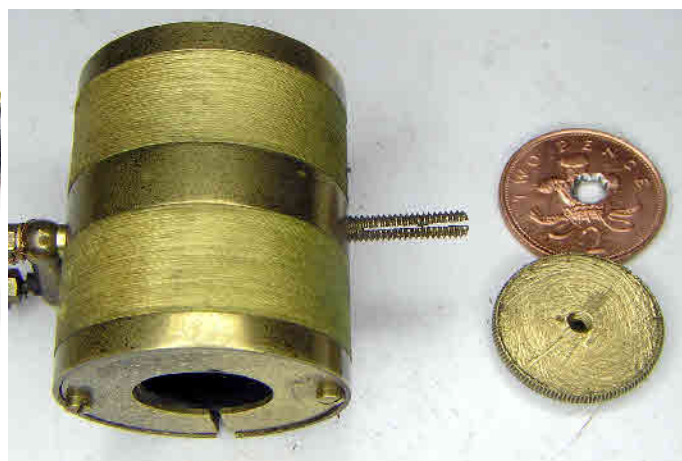
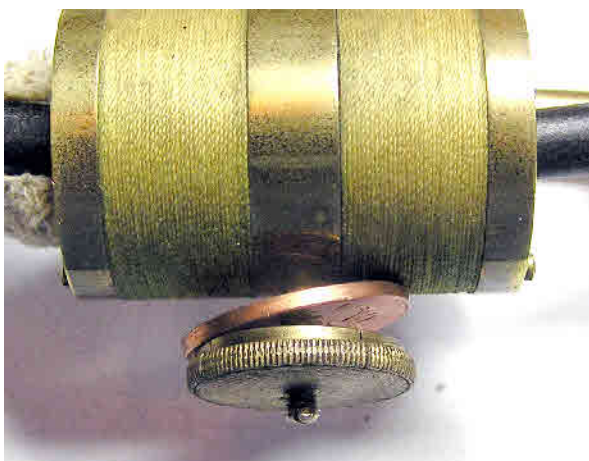
Early Battery Clock Parts & Restoration

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Clock Restoration pictures by kind permission of the owner.

The clock as delivered. It came without a case and the owner would like it mounted on a round wooden base under a glass dome in a similar fashion to the tall Bulle movements with a 29cm pendulum (Type A). This movement has the slightly shorter 24cm pendulum normally associated with a cased clock. The magnet though is the same length so it should fit OK on the same type base. The only problem will be the height of the dome.



The clock has a few problems though. The two penny piece has been added because the nut has been cut down!!

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This is the type "A" clock we will be using as a template for our new frame parts. We'll need two pillars with decorative washers. These will be secured from underneath by 6mm screws. The original clock has a slightly deeper base to house the battery. Our new base is solid wood and will house the battery in a short column that will protrude through to the top as was common on the Crystal dome Bulle clocks. The new base will also require a third brass levelling foot.

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The photo above shows the new pillars and washers turned up on the lathe. Each pillar has two cross drilled holes 10mm from the top. One will take the 7mm cross bar and the other the 6mm magnet support posts. These holes have to be precisely positioned so that the frame will sit square and upright. The photo at top right shows one of the pillars in position. The lower photo shows the new third foot secured in position. This foot allows the base to be levelled so that the pendulum can swing freely over the magnet even when the table or mantle piece is not truly flat. I never liked the way these just screwed into the wood on the original model so I have upgraded this clock with a machined brass insert. I must make the point here that I am not trying to pass this clock off as an original. I am solely concerned with making a useable timepiece that will save the movement from being scrapped.. I am adding enough changes so that it is obviously not original.



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The new parts in place on the new base. The frame stands straight and solid so we can now progress with restoring the rest of the clock. I'll leave the battery column until later.



The magnet retaining loop is broken and will need to be replaced. I will either use a spare one or silver solder this one up. The magnet itself was a little low on the magnetometer with a 140mm reading. I have therefore re-magnetised it to obtain a good reading of 180mm.

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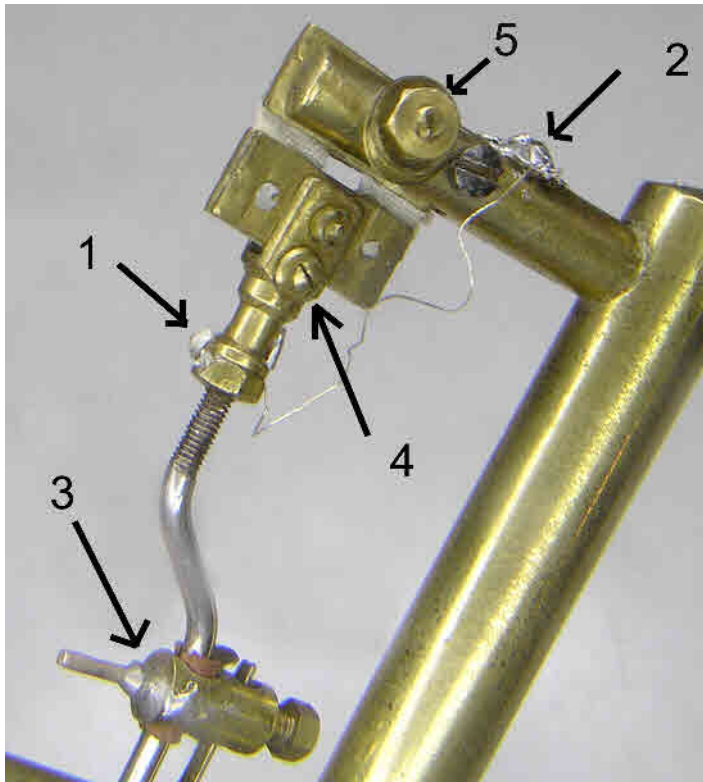
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This photo shows a few more issues with the clock. At 1 and 2 you can see that the contact wire has been soldered in position. It should in fact be connected to the two terminals shown at 4 and 5. The wire should also be formed into a large loop to alleviate the problems of fatigue after millions of oscillations.

At three you can also see that the contact pin has been soldered in position. This is normally the case when the pin has been snapped off and the stub cannot be removed from the assembly. The solder will be removed and the pin inspected. If the pin has broken off then I'll either have to drill and re-tap it or make a new assembly.



These final photos show that the pin was broken and the stub left inside the assembly which is also the worst for wear. So I think in this case I'll make a new one or replace it with a spare.

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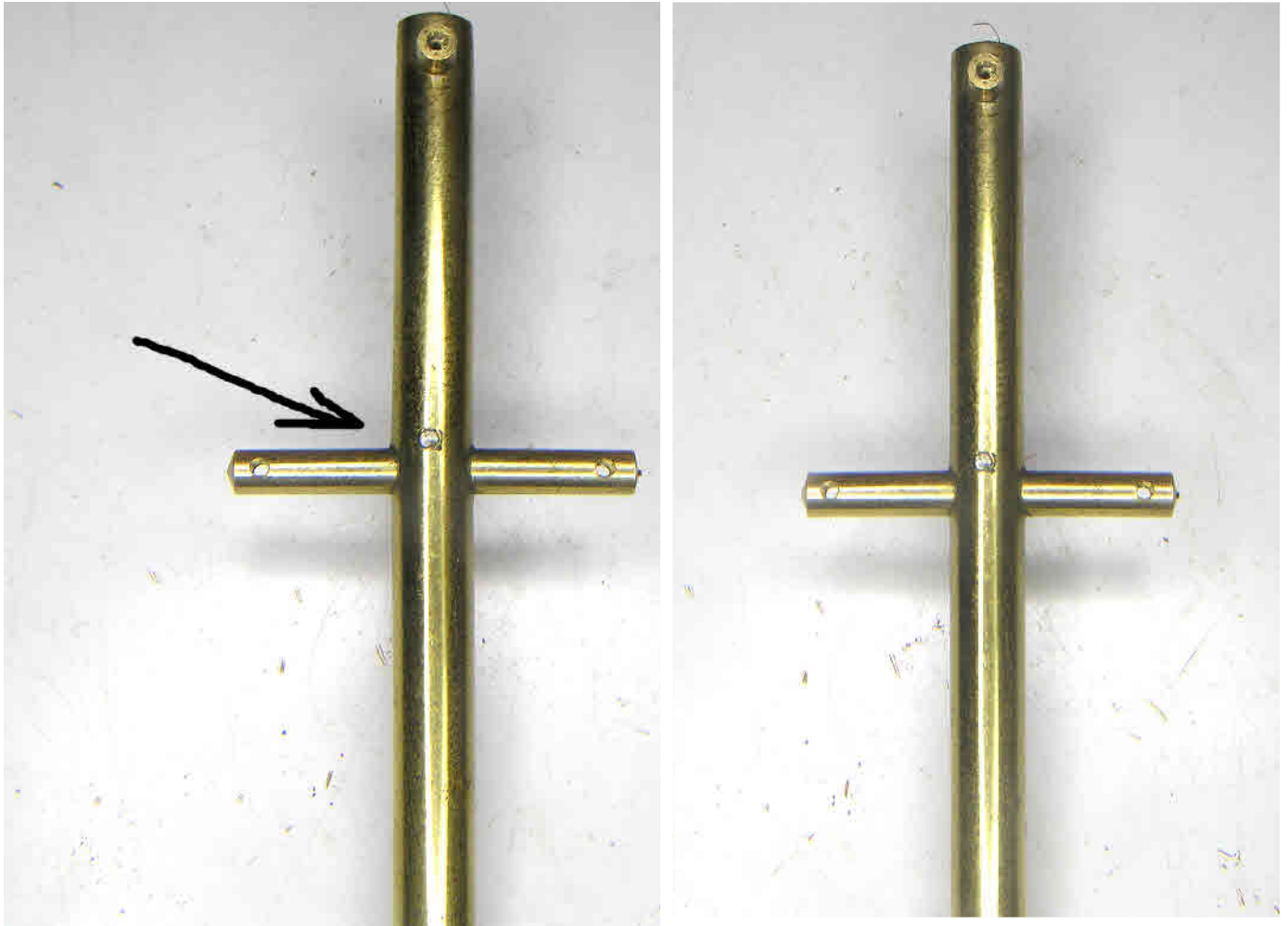
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The photo on the left shows that the main frame is slightly bent at about the point immediately above the cross arm. This was an easy matter to straighten given a bit of controlled brute force. The frame was secured in the jaws of a large vice, protected by fibre inserts. Pressure was then applied slowly until the frame looked straight against a steel ruler. How it got like this we'll never know. But it must have taken one hell of a knock at some point.

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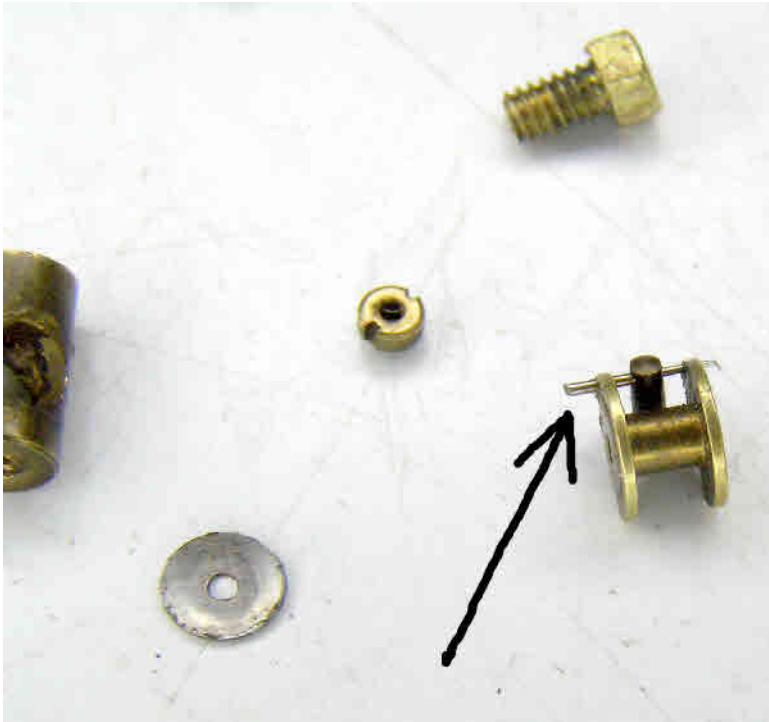
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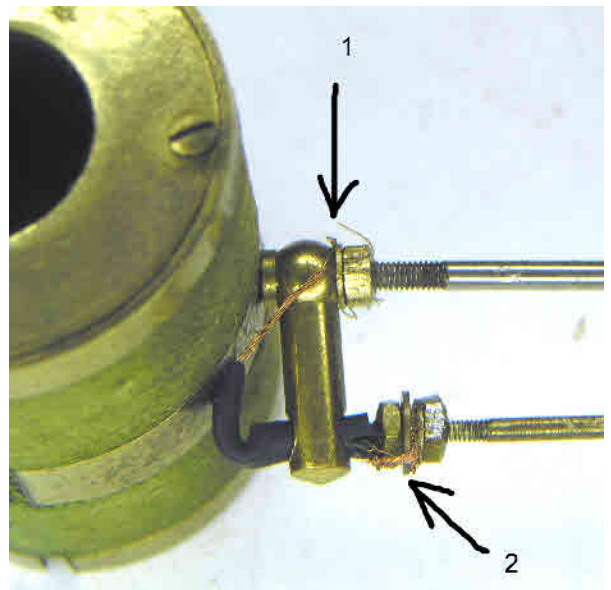
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This photo shows the lower Isochron bracket found on the pendulum rod. Notice that the pin has gone missing and a taper pin has been used to replace it. This would have the tendency to jam in the holes and not allow the isochron spring to level itself correctly. So we will replace it with the correct size 0.5mm piece of piano wire.

There should also be another two steel shim washers on this bracket. Only the small domed out one is left. We will replace these.

The photo at right shows the coil assembly, which, besides being badly frayed, one of the wires is connected to the wrong place. The wire at 1 should be connected inside the coil cover and not be seen. The wire at 2 is correct but the nut shows signs of solder. This will be investigated and the solder removed.



The coil itself has obviously received some attention. It looks as though a length of wire has been added and the joint wrapped in Cellotape. I wonder what the condition the coil is in..

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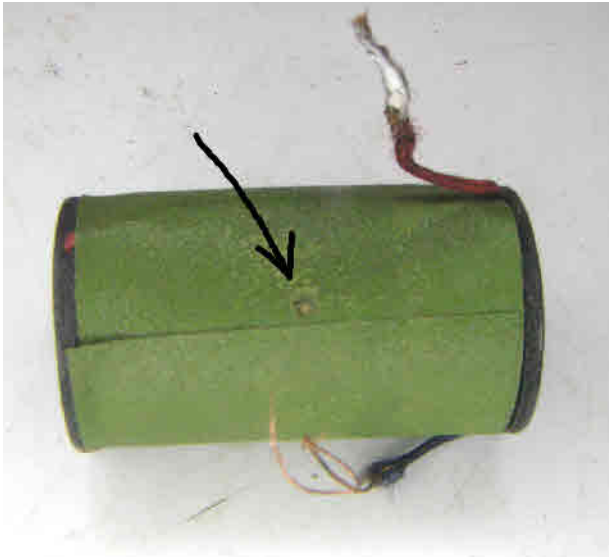
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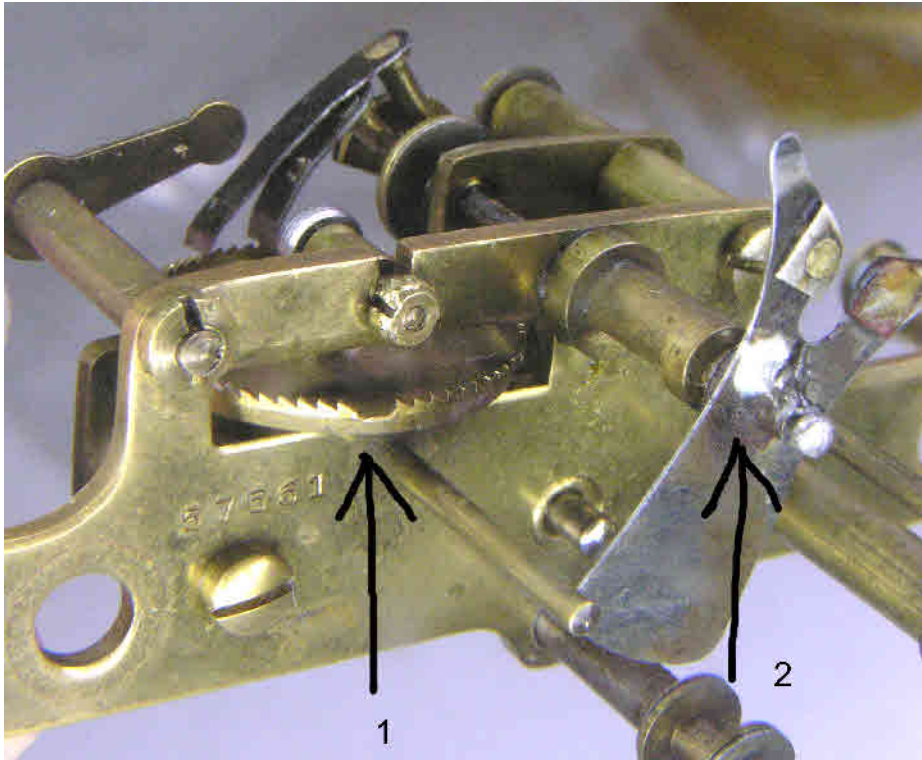
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Well, the coil reads a consistent 1200 Ohms so it looks OK. But it was a near thing! The small hole you see in this photo has been formed by the pendulum rod being screwed too far down through the brass coil casing. It has then just started to penetrate the coil. Lucky it went no further. The best way to avoid this on re-assembly is the leave the coil caps off when attaching the rod. The rods progression can then be monitored as it is screwed in. It should not protrude through the spacing rods by more than a single thread.

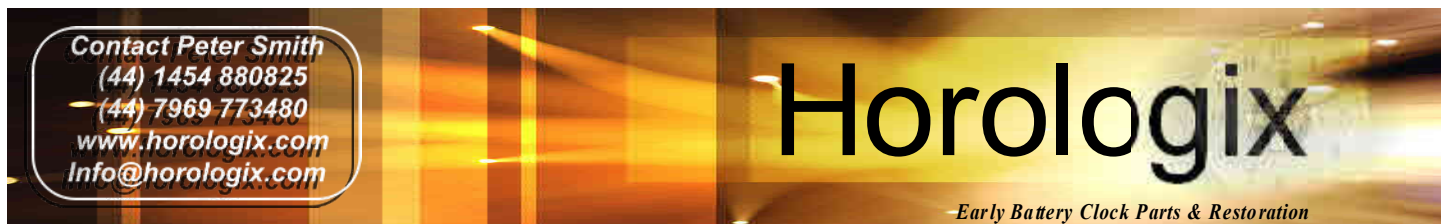
This photo shows the count wheel on the movement itself. I guess there are one or two teeth missing here (1). That'll probably need fixing???? Two possibilities are open to us. The first is to silver solder a new piece in the gap, turn it down on the lathe and then form the missing teeth with a cutter. If you're really keen then they can be formed with a small needle file and a large magnifier.

Also shown is the large lump of solder to the back of the fork arbour(2). Why? Is the fork loose? The fibre contact also has a large dab of what looks like Araldite. This little lot adds up to a large amount of work.



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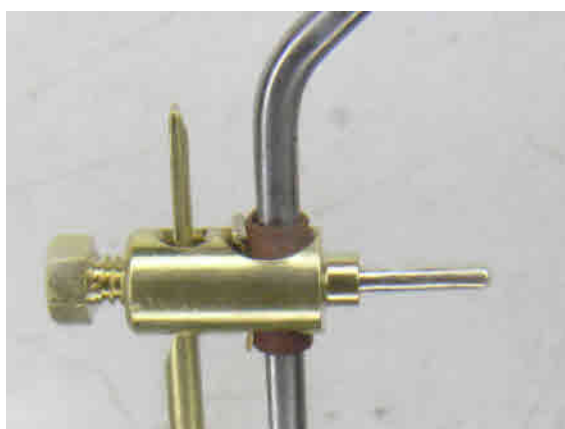


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The fork arbour cleaned up ready for new contacts. The damage wasn't that bad and the fork has been riveted tightly onto the arbour. New contacts can now be made and fitted.

The photo at right shows the new rating nut to the correct dimensions. I managed to retain the original Cord around the pendulum bob by securing it with masking tape while the brass was cleaned and polished. This was then removed and the whole casing and cord washed in soap and warm water. To remove the dirt and bring back some of the colour.



The new contact pin and assembly in position with fibre and "T-piece" spacer. It's always a good idea to check continuity at every stage of re-assembly. Especially the pendulum which has two rods that need to be electrically isolated.

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The frame and base assembled ready for the movement. The wood has been polished with about 10 layers of French Polish. Which has then been cut back with wax and 0000 gauge wire wool to present a nice restrained lustre. A new Horologix replacement metal badge has been added as well as a band of 1mm brass wire around the circumference of the base. The central battery tube has been cut from old 55mm tube and fitted. The cap has been formed by spinning. The frame and battery casing have then been lacquered. The whole, I think, is coming together quite nicely and lends an air of elegance to the old movement.



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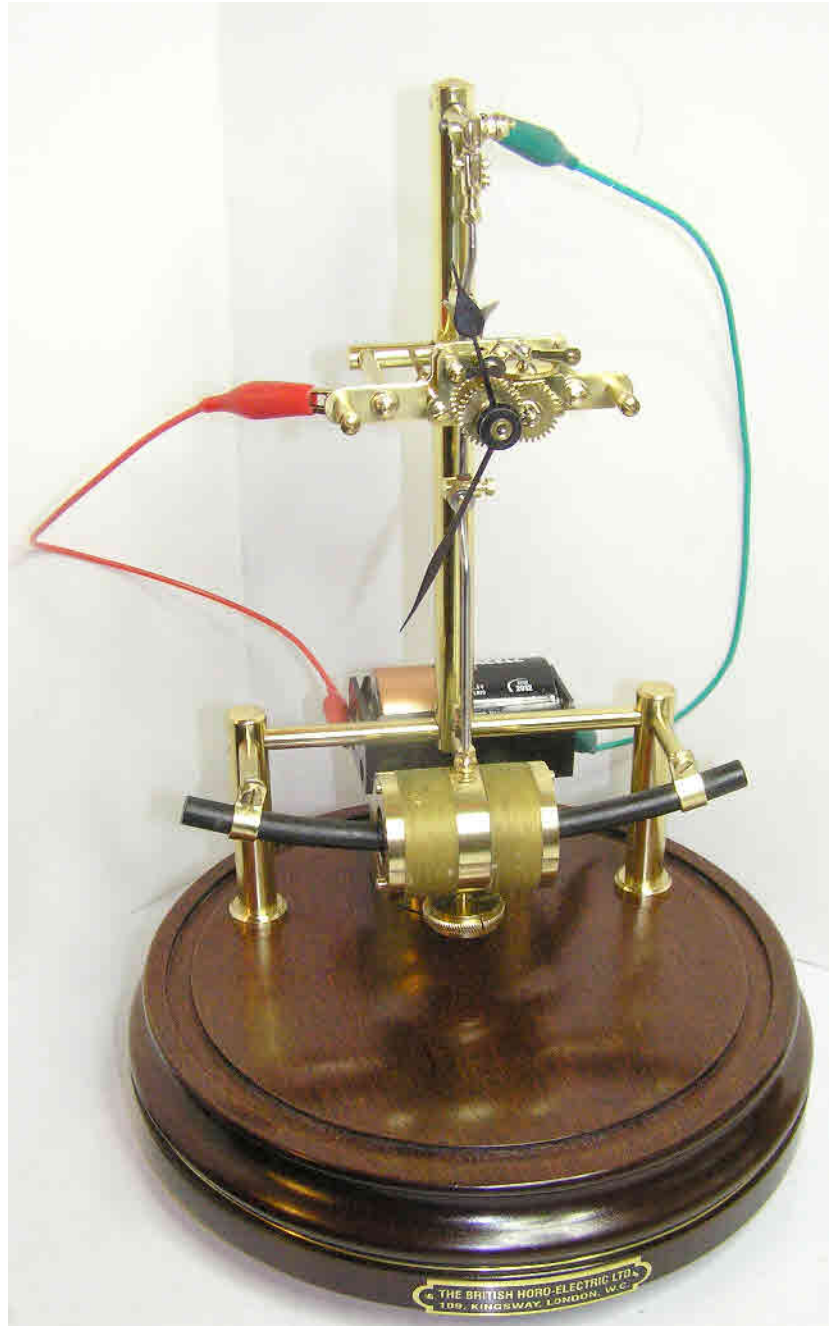
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The photo above shows the new Isochron bracket in position with the new piano wire pin and washer set. The clock assembled on test while the new wiring is made up and fitted.



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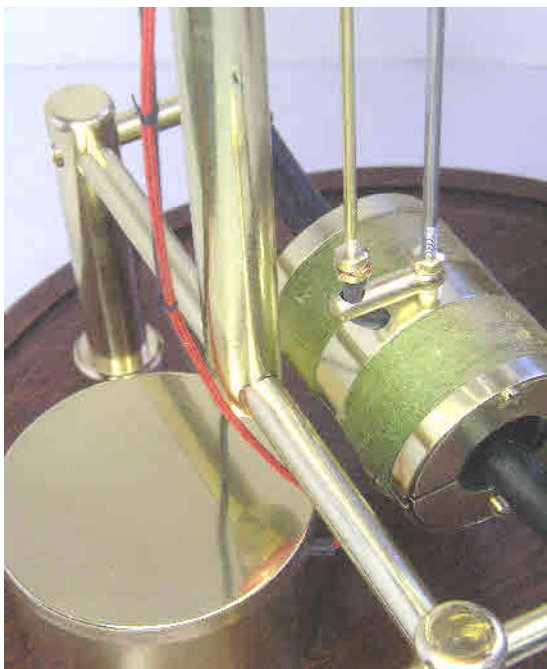
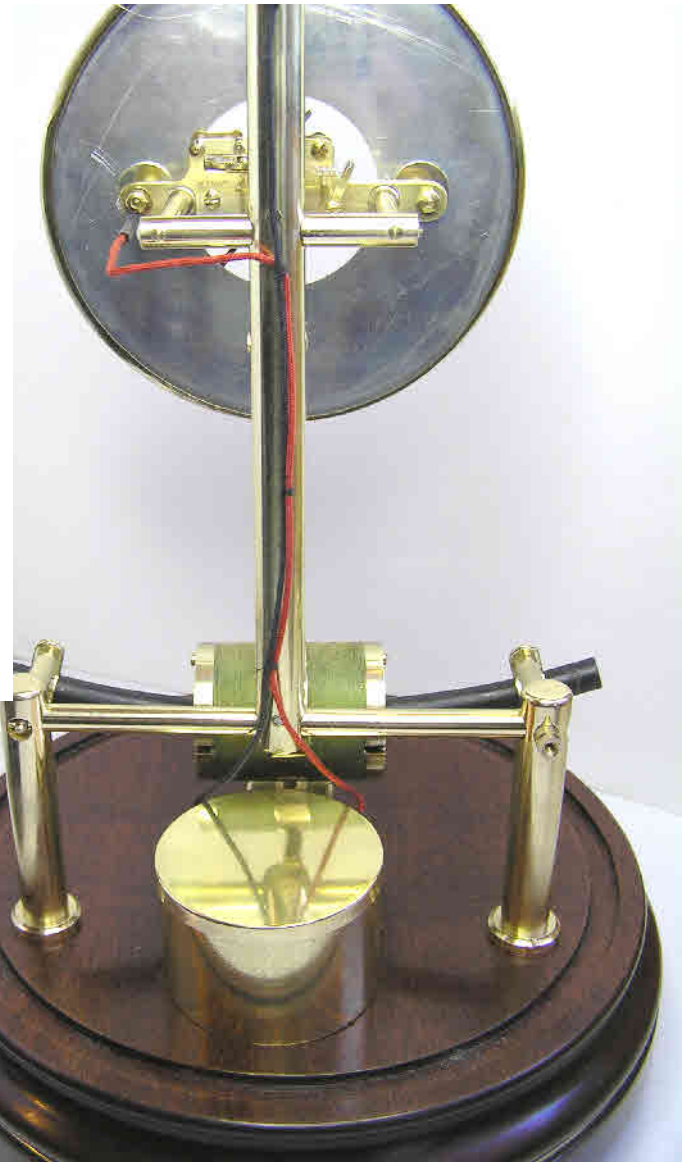
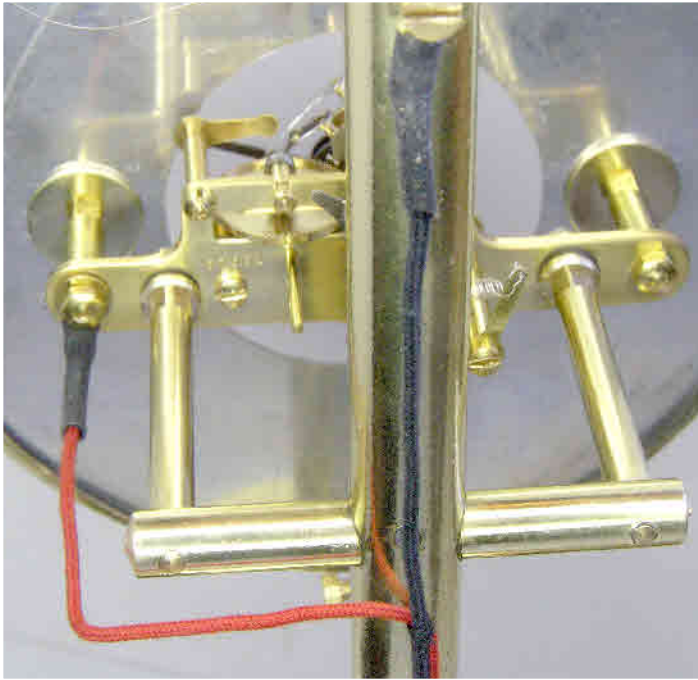
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The rear of the clock with the new wiring in place.

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The Finished Clock.

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