



**Bulle Clock Serial Number 6792.** *(By kind permission of the owner)*

## *Restoration of Bulle Clock Serial Number 6792.*

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# Horologix

Early Battery Clock Parts & Restoration

## **Bulle Clock Serial Number 6792.** *(By kind permission of the owner)*



*The restoration of this clock is shown by kind permission of the owner.*

*This is an early Type "A" Bulle clock probably dating from the first year of production 1921.*

*There are a number of problems with the base. It is missing the two front wooden feet and also the third brass levelling foot. It has been varnished at some stage in its life and this will have to be removed and the whole French Polished.. First impressions of the battery tube are that it is marked but not holed. There are two small pin holes at the front of the base where the Brass label should be. The Dial indicates that this would be the English version. The dial looks to be in excellent condition with only the brass needing to be cleaned.*

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The underside of the base showing the “Runs” of the varnish that has been applied to the top. The feet are marked by their absence from the two holes at the front. The brass levelling foot at the rear is also missing as well as the steel battery cover. All will need to be made.



The dial shows no major marks or fading..



This is quite interesting. The magnet, although it looks right, is a very loose fit in both brackets. The screws are tight and the bracket pulled in tight as it will go. The magnet may be some sort of replacement and will need to be checked thoroughly.

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*These two photos show the damage caused by someone trying to remove the magnet bracket pillars; probably using a screw driver as a lever against the wood base. Note the grooves and dents. You should also note that the pillars themselves are missing the brass washers on the rear two. Another job for the lathe. The poorly applied varnish also shows up quite well..*



*Look what turns up under the varnish after it was cleaned away. The base has had some little visitors in the past. All the holes look to be filled and there are no new ones. So it looks as though the infestation has been cleared. It will be given another dose of wood worm treatment though before staining, filling and French polishing.*

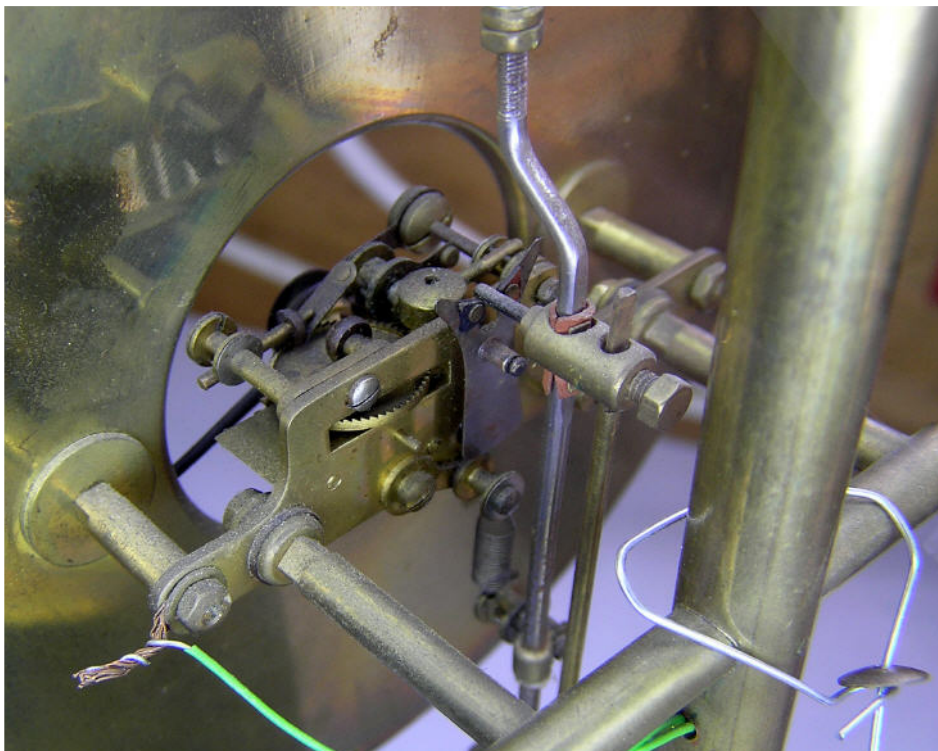
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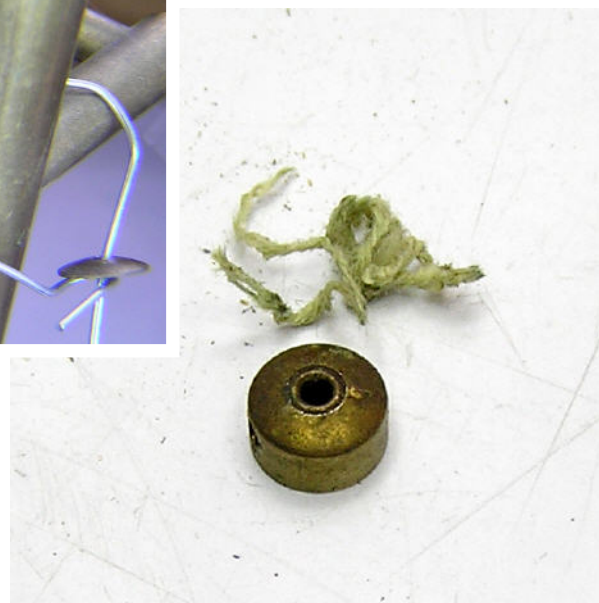
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*The movement generally looks pretty good with everything intact. The only real problem seems to be the dirt and oil.*

*The owner has thoughtfully kept the hand collet attached to the clock with the loop of wire. That's one thing we don't need to manufacture.*



*The photo above shows the the amount of cord inside the damper cap. This is the same cord as is wrapped around the pendulum bob. It will be replaced and primed with a small amount of oil.*

*The cord on the pendulum bob is very tired and brittle. I will look at saving it but I'm not hopeful.*

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*The fork contacts are both worn down to the steel and will be replaced.*



*The partial stamp found on the magnet. I will try and discover it's meaning.*

*The base after the varnish has been removed, ready for filler and polishing. I will try and keep all the small nocks and blemishes.*



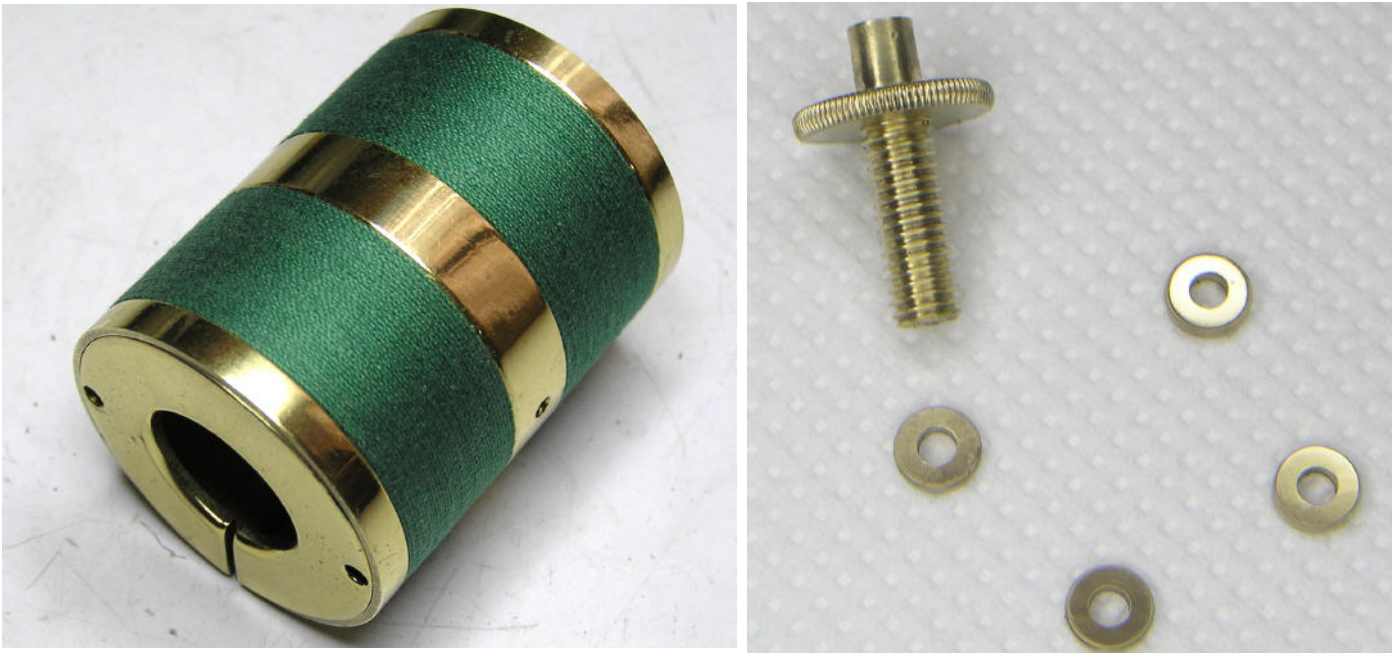
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*The rewound pendulum bob and the replacement parts so far. The bob has been rewound with “Gutterman 237” cord. The four washers are the replacements for the the ones missing at the base of the pillars that support the bar magnet. The photograph doesn’t show it well but there is a small chamfer on the outside of the washers as per original. The 6.00mm threaded and knurled brass is the new adjustable foot for the rear of the base. This screws directly into the wood. With these parts finished we can now start to rebuild the pendulum and magnate support assemblies.*

*The wooden base is still receiving multiple coats of French Polish and we must leave this to harden off completely before final cutting back and buffing. The battery tube and support frame can then be added ready for the pendulum and movement.*

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*The base polished and waxed. There are about ten coats of French Polish on the base. This has been cut back to leave a soft quiet sheen rather than a bright dayglo finish. Any more coats would have filled in most of the knocks and dents in the wood which would have made it look a bit too bright and new. This way you can still see and feel the holes and blemishes giving it a well used yet waxy feel.*

*The lower photo shows the two holes left by the original brass pins that held the “British Horo Electric” label.*



*This has been replaced with a Horologix reproduction. These are made in exactly the same way as the original using the same materials. The holes line up perfectly.*

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*The brass battery frame ready to screw into the base. The photos left show the reproduction label in place.*

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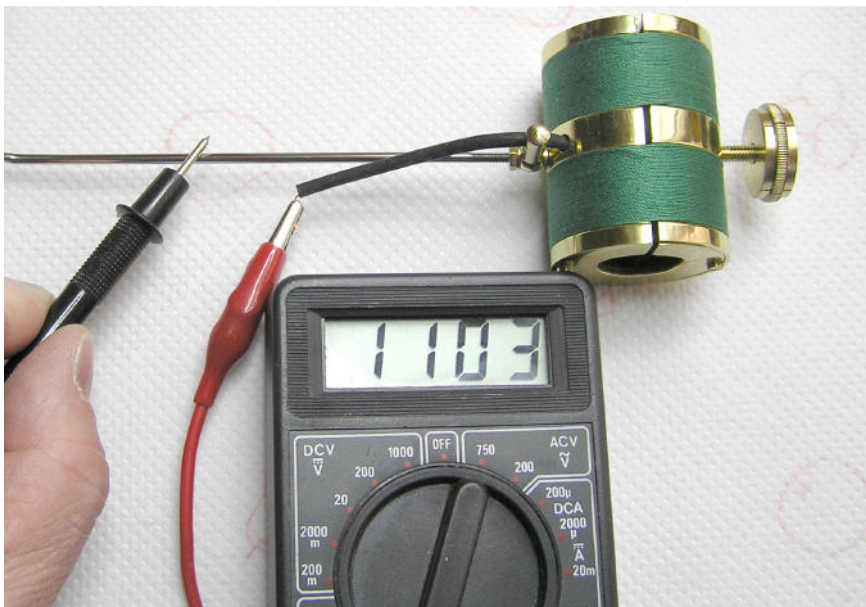
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*The new wooden front feet and the replacement brass stabilising 3rd foot.*



*The coil is checked constantly for continuity. The photo shows the pendulum after the bob assembly has been completed and reattached to the rod. Before the wire and insulation are cut to length the reading is checked. In this case we still have a steady 1103 Ohms. The contact pin assembly can now be added with the brass connecting rod.. The whole pendulum is then checked again.*

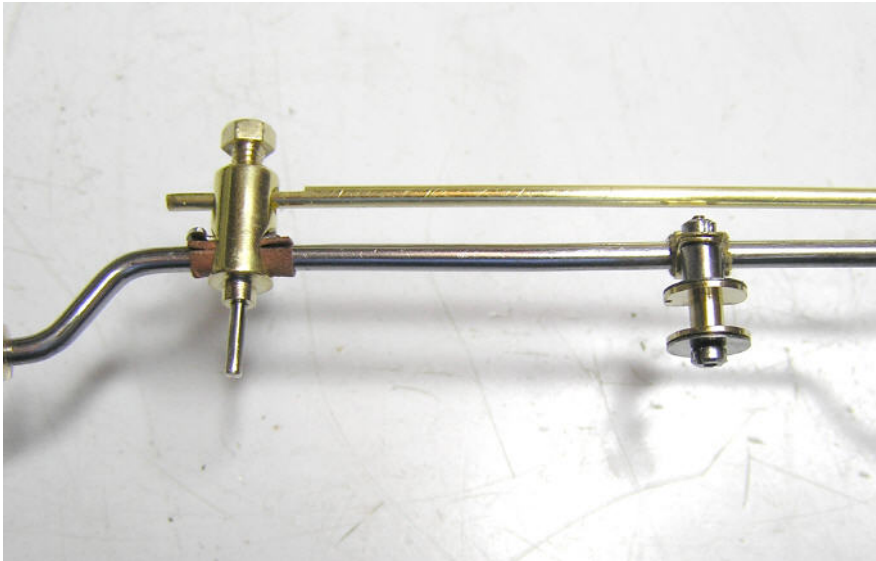
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*The contact pin and Isochron spring arbour assemblies. In place.*



*The magnet, battery frame and pendulum remounted. The magnet itself is loose in the frame and after measuring its diameter it seems to smaller at 8.4mm than the normal 8.8mm. Now whether this is a replacement from another clock or was a manufacturing fault we will probably never know. The simple answer is the wrap the magnet with some padding until the brackets can be tightened to pinch the magnet securely. I have done this and the modification cannot be seen unless the magnet is removed. An of course the mod is reversible and will not damage the clock in any way. It has also been re-magnetised and Grate blacked.*

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*The damper has been cleaned out and filled with the same cord as was used to recover the pendulum bob. The smallest amount of oil has then been syringed into the cap to allow a smear to appear on the underside.*



*The suspension assembly in place with new silk suspension and replacement screws and nuts. The small blued screws, one either side, are there to pinch the top block of the suspension in place and not allow it to move once it has been positioned correctly. The top of the pendulum is loose in the bottom suspension block to allow it to swing freely front and back as well as to twist very slightly. This allows the pendulum to swing freely over the magnet even though the clock may not be level. If both top and bottom blocks of the suspension were tightly secured then the pendulum will have a tendency to oscillate badly if not perfectly setup.*

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*The movement in position ready for wiring up and attaching the isochron spring. It is important at this point to make sure the pawl and stop act correctly by picking up one tooth only on each full swing of the pendulum. Swing the pendulum by hand and watch the action. On these early clocks there is no adjustment possible on the pawl barrel as the arbour has a flat to engage it. The depth of the contact pin in the fork is therefore critical*

*Another view of the movement in position.*



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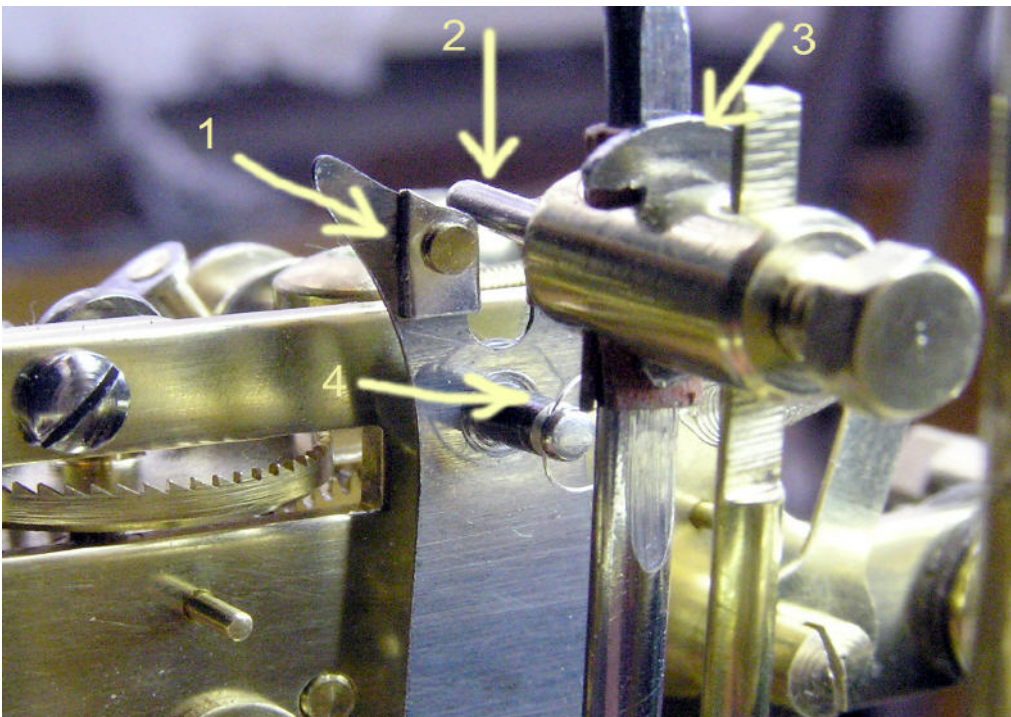
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Most, but not all, of the early “A” type clocks had a brass wire band around the waist of the wooden base. This band was secured at the rear by bending the ends at right angles and forcing the them into a small hole about half an inch deep. It is easy to decide whether a clock was originally fitted with the brass by searching for the hole at the back. It may be difficult to spot if the base is covered in dirt, wax or paint etc. The brass wire is normally 1mm but can be up to 2mm. The wire should not be fitted when restoring a clock if the hole



is not present.

Points to note in the movement. 1. The new riveted silver fork contact. 2. The contact pin should engage in the fork by about half its diameter. Testing the action of the pawls previously described should decide this critical depth. 3. The new “T” piece inserted in its proper position between the fibre insulator and the brass plug inside the contact pin assembly. 4. The contact spring is engaged in a rolling action in the silver end of the fork arbour.

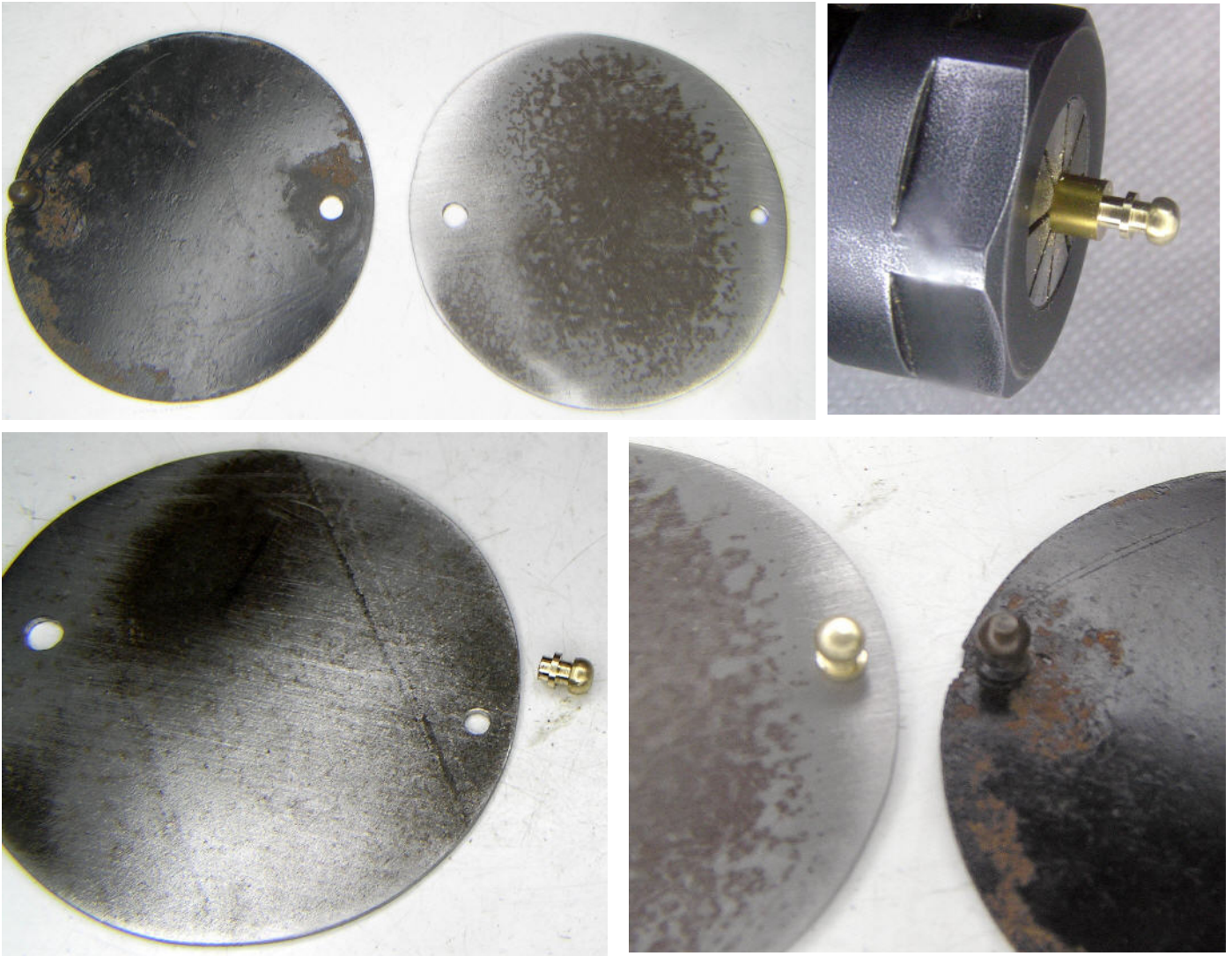
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*The tall Type "A" Bulle clocks had a small round steel cover over the bottom of the support tube to hold the battery in place. On many clocks this is missing or badly damaged by leaking battery acid.. This clocks cover is completely missing and needs to be manufactured. These photos show the stages in manufacturing a new one from 1.25mm steel plate. It is a simple process to cut and trim the steel, drill a 5mm and 3mm hole, turn the 5mm brass knob and rivet in to the plate. All we need do now is clean it and undercoat it before spraying it black..*

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The photo top left shows the new cover in position.. The next series shows the method I use to clean the dial surround without damaging the dial itself. I cut two pieces of brass shim (about .006") to the inside and outside diameter of the face as shown. Then using 0000 grade wire wool I polish the surround piece by piece, moving the shim around to cover the area of the dial I'm working adjacent to. It works very well.

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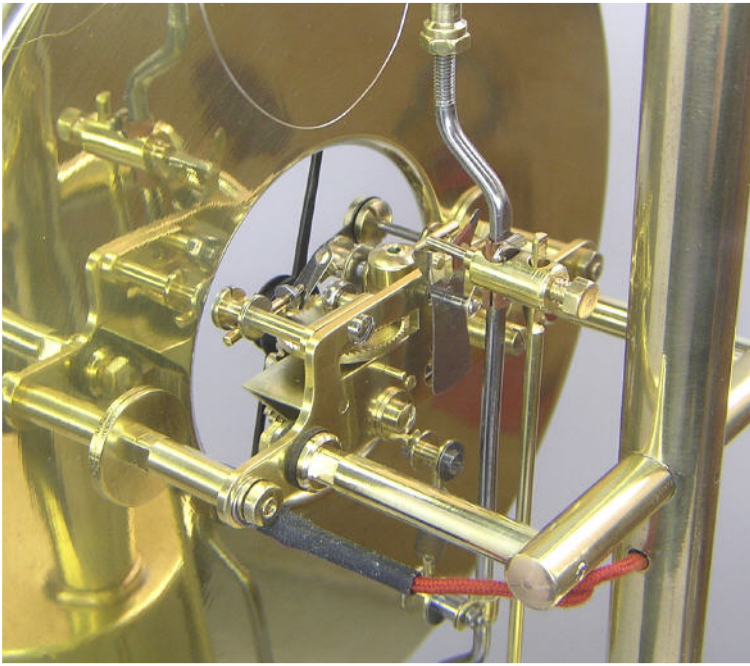


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*The completed restoration showing the movement, dial and rear of the clock*

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*The completed Restoration.*

*Note. - I got a bit closer in deciphering the word on this magnet. I have checked an older magnet for the wording that I couldn't quite read on this one. The last letters may be "m", "ri" or even "rd". So the whole reads as either "Allevard", "Allevam" or "Allevari".*

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