



**Bulle Clock Serial Number 174475.** *(By kind permission of the owner)*

## *Restoration of Bulle Clock Serial Number 174475.*

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# Horologix

—Early Battery Clock Parts & Restoration

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*This clock is a model XA in a wooden “Lightening” case. The movement will be shown undergoing restoration by kind permission of the owner. As can be seen from this photo the casework and brass fittings are all in very good condition and other than a good wax polish will no require any remedial work. The brass still retains most of its original gilding and any heavy polishing will remove it. The glass will be removed and cleaned.*

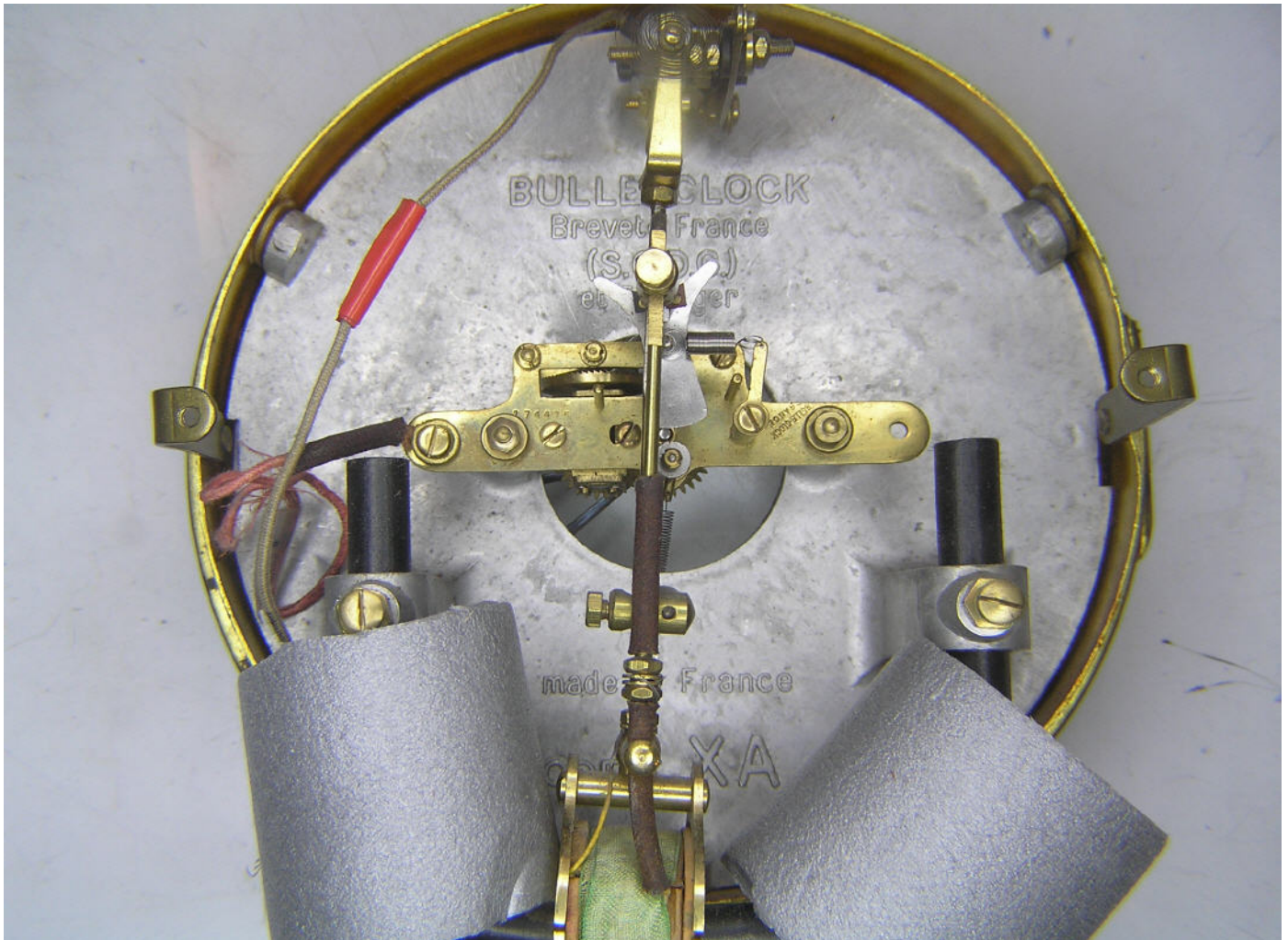
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As can be seen here, the clock movement also appears to be in very good shape. Nothing at first glance seems to be missing or damaged. This should be a dream to restore. The coil is reading a steady 1190 Ohms and all the insulation is intact. These “Insert” movements differed from the clocks under domes in that they had no need to have fancy brass support columns or cord wound bobs that were esthetically pleasing because they were completely hidden inside the case. The only way to see it at all was by lifting the clock completely and looking up through the bottom of the case. Hence the whole movement was simplified by having a single aluminium plate that served as dial support, pendulum bracket, movement bracket and magnet support. Very practical, efficient and inexpensive to produce.

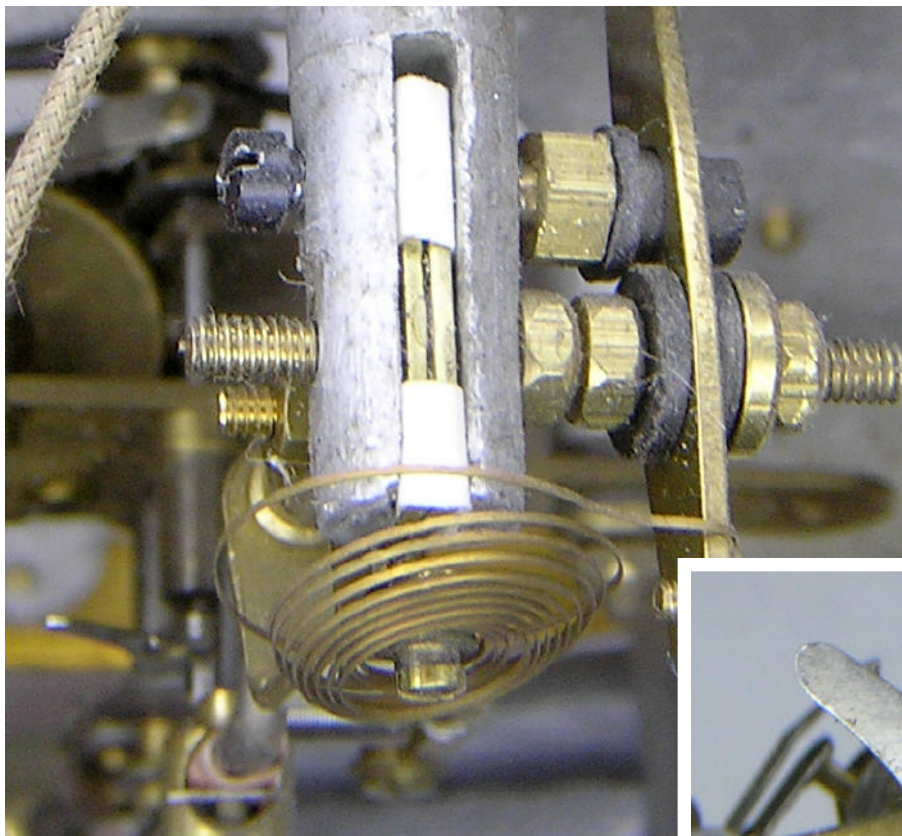
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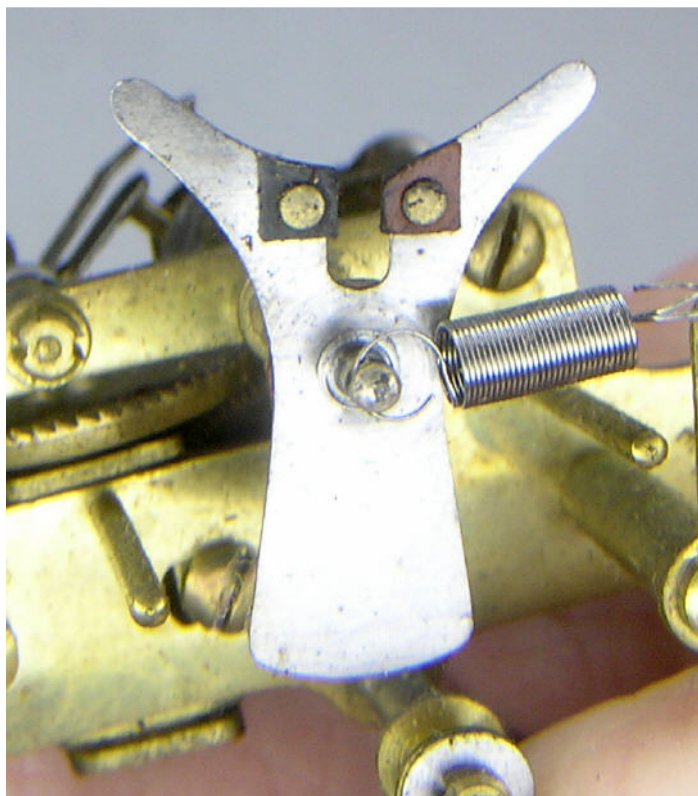
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The top of the clock showing that the suspension is held together with white insulation tape. The photo also shows the mangled balance spring. The use of such springs on Bulle clocks is purely for electrical continuity between the frame and the pendulum. So, as long as it doesn't interfere with the swing of the pendulum it doesn't really matter that it is twisted in such a way. But for aesthetic reason we'll replace it anyway.

The fork contacts were found to be well worn right down to the steel of the fork itself. There is also evidence of oil embedded in the fibre. So we will replace both it and the silver contact. Note the steel contact spring in this photo. I have come across this type on quite a few later clocks. It is a lot stronger than the original silver springs found on earlier clocks so that too much tension will impede the action of the fork. So they need to be set up very carefully with the slightest of tension being exerted. But being so much stronger they are much less prone to stretch and corrosion..



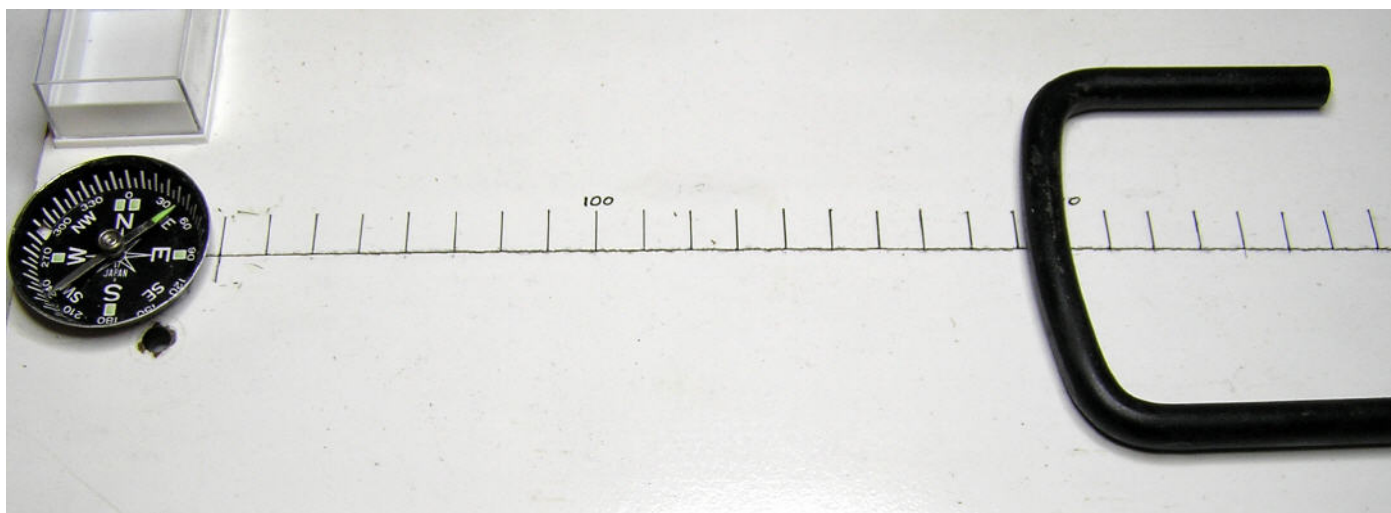
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The magnet on this clock was a little weak and was showing only 160 on the magnetometer. So it has been regenerated and now shows a healthy 193mm. For those not familiar with my home made device I'll just expand a little. The board to which the compass is attached is turned until the needle points North. After allowing it to settle and with no other metal close enough to influence the reading the magnet is introduced from the right hand side. It is slid along the calibrated line until the needle is deflected to 45 degrees. It is then at a point where it equals the pull of Earth's magnetic field. The scale, which is marked in 10mm units, is then read to see how far the magnet is from the centre of the compass. The further away the magnet is when the compass needle is deflected to 45 degrees then the stronger the magnet is. This reading is then used to compare the strength of the magnet. I have found that a magnet that reads less than about 170 mm is a little weak for the Bulle clock and should be regenerated.

The device is simple but good enough to show how strong the magnet is and how effective the regeneration has been. It also tells us whether the magnet has the correct polarity. Some clocks I have come across have been wrongly regenerated in the past, showing only two poles. The Bulle clock must have three poles., South at both ends with North in the middle; although it doesn't really matter which way round they are, South-North-South or North-South-North so long as there are three. The battery connections will just need to be reversed..

The common view is that all Bulle clocks were originally South-North-South.

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*As I first suspected on seeing this clock very little was damaged or missing. So apart from the Balance contact spring and the Fork contacts the rest of the clock was in good order and just needed a strip and clean. These photos show the new spring and the finished pendulum about to be re-united with the dial plate.*

*One thing to note here is that the pendulum looks back to front! The balance spring is on the back of the pendulum. This is because the movement, pendulum and magnet all use the aluminium dial plate as the clock frame.*



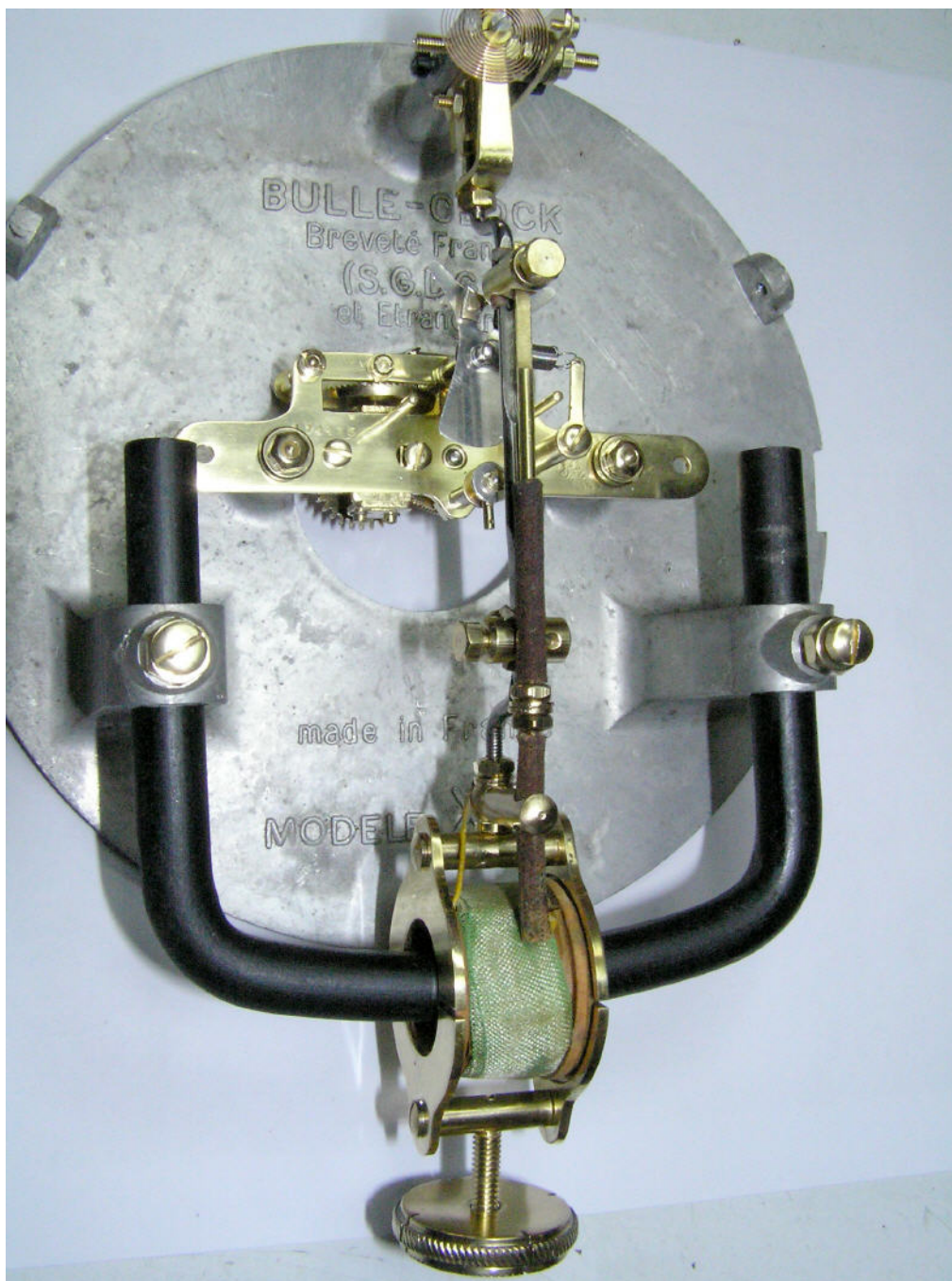
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*The clock reassembled ready for testing.*

*A difficulty with this type of clock is where to hold it while the testing takes place. You could of course put it back in the case but that would be a real problem if you have to adjust the pendulum length, pawls or contact pin entry height. The best way is to either make a frame to screw the dial plate to or use some clamps to grip the plate on the side.*

*All that's now left to do is polish and fit the hands, clean the dial in warm soapy water and polish the case.*

*The clock will be left on test for a week to check that the Isochron spring, when re-fitted, is correctly tensioned so that the pendulum rating nut is fully effective in causing the clock to run slow when fully lowered and fast when fully raised.*

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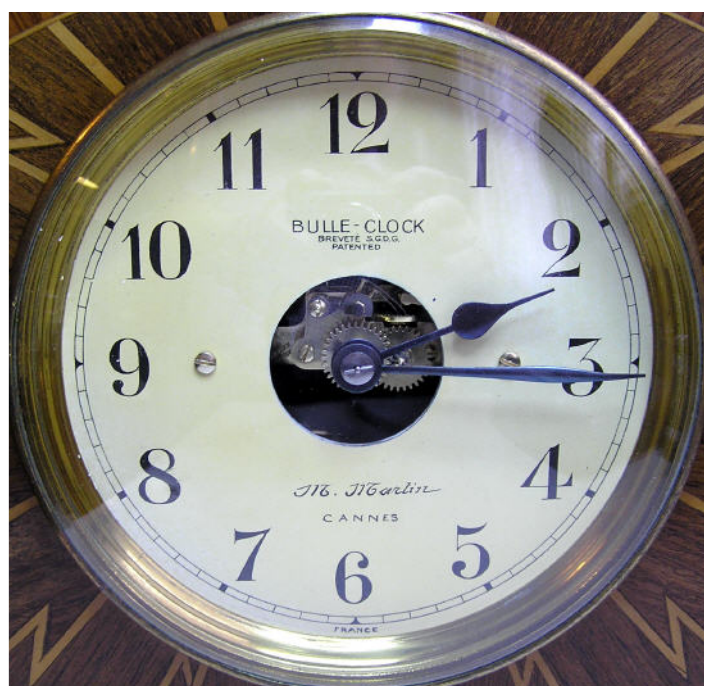
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The dial is generally in good condition and suffered only from a grimy surface. This was easy to remove with just a little warm soapy water. It is difficult to tell whether the yellowing is caused by smoke or whether it was originally this colour.

It certainly suits the case and wood patination.

The finished movement, dial and hands refitted to the case. The glass and bezel have also been cleaned in warm soapy water. The hands have been cleaned and then waxed polished to bring out the Blueing.



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***The completed clock.***

*The case has just had a buff with wax polish to bring out it's lustre.*

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