



Bulle Clock Serial Number 186300. *(By kind permission of the owner)*

Restoration of Bulle Clock Serial Number 186300.

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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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This Bulle clock is in for a full, restoration and the owner has kindly agreed for it to be shown in the various stages of repair. The suspension was made from the original chops pinched together with some form of thin red plastic sandwiched between.. It wouldn't have lasted long. Besides which it was much too long and the pendulum was hitting the base. The hairspring was loose and the end was loosely looped into the overarm with no pin.. The dial is in quite good condition although the minute hand had come away from it's collet. And will need to be re-set or a new collet made. The base has a silver engraved plate which states "**From a Horse Lover to a Horse Lover, 1928**". Good dating evidence.

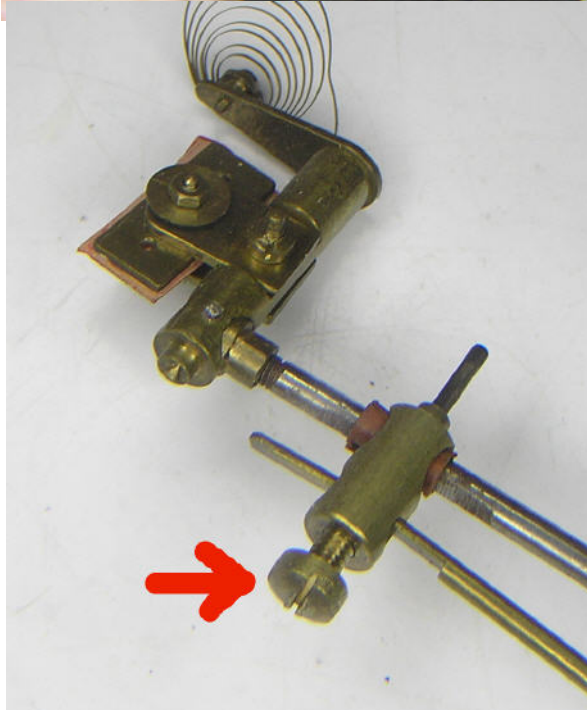
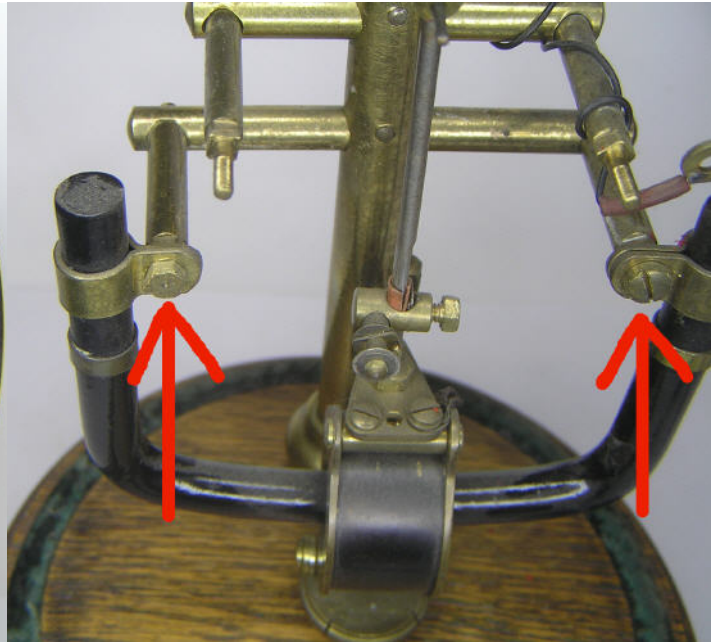
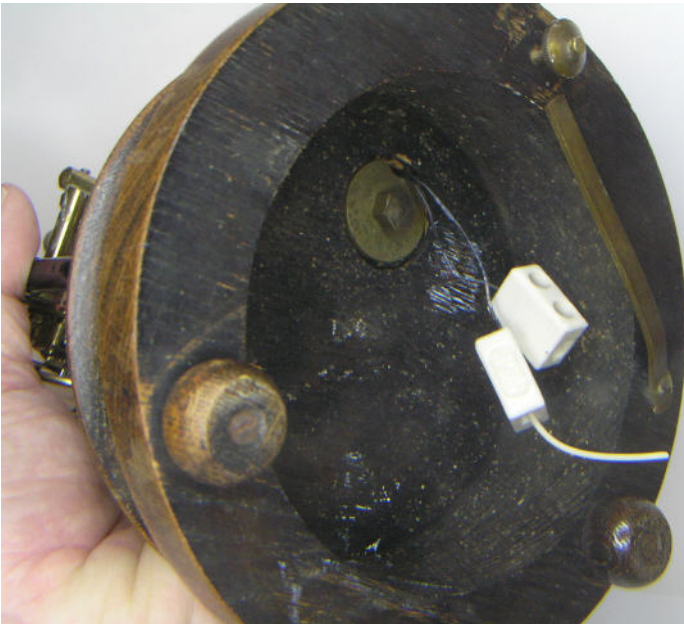
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The base is generally in good condition but is flat and tired. In this case the base was not French Polished originally, so I shall stain the wood, seal it and wax polish.

The clock has been apart in the past and some screws and nuts re-assembled in the wrong places. Note the magnet retaining screws have been mixed up with the contact pin assembly.

The assembly itself is missing the steel "T" piece which stops the fibre from being pierced and so shorting the pendulum.



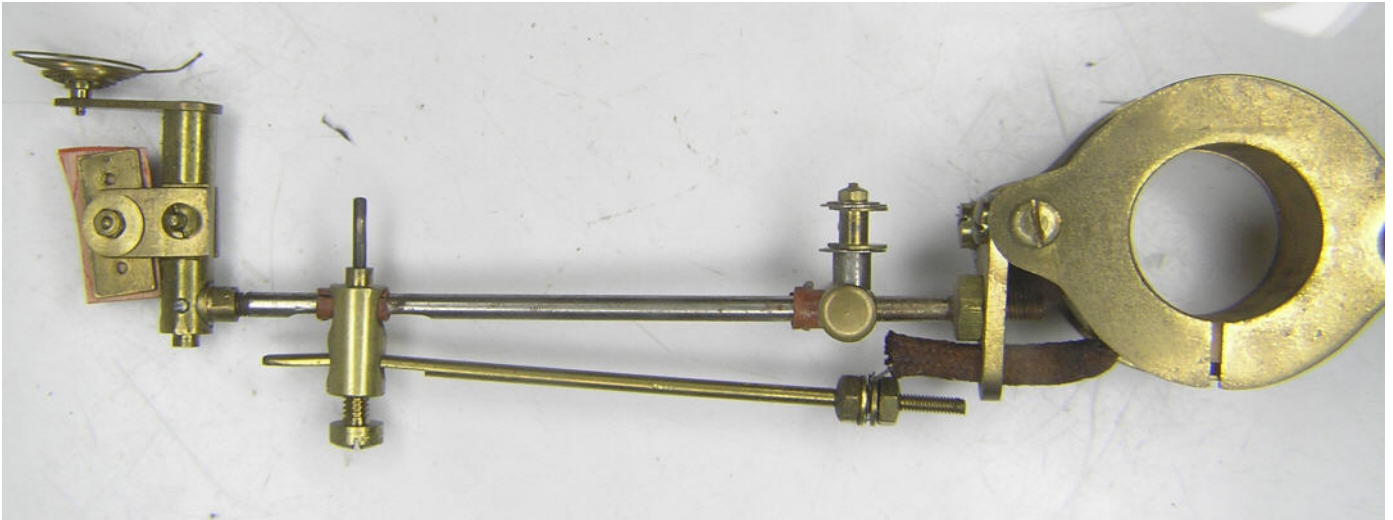
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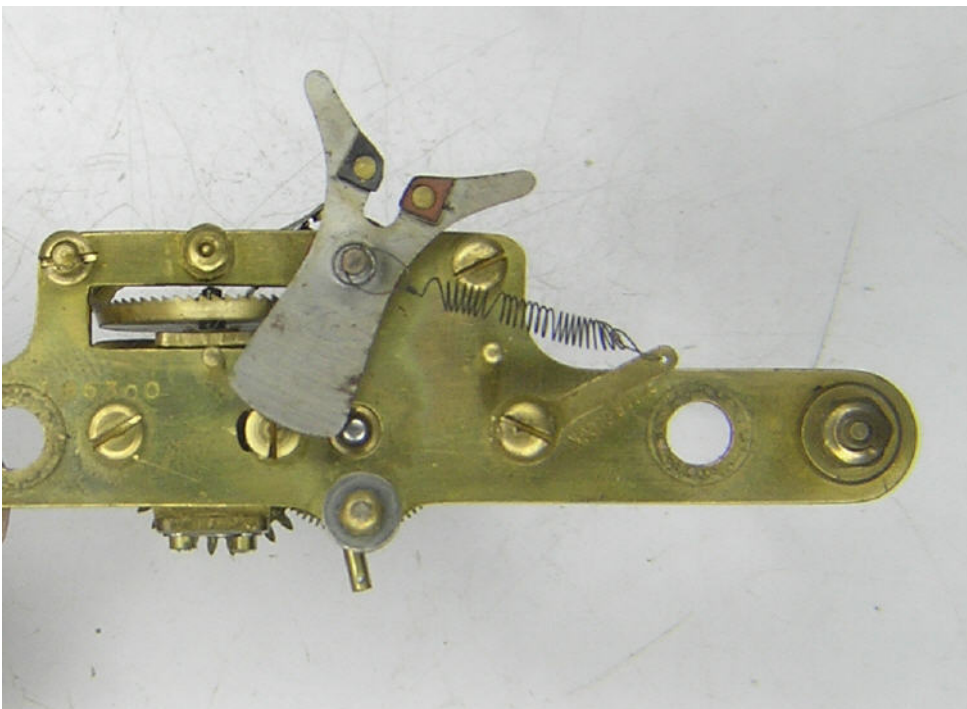
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The pendulum assembly which shows the brass rod is outside it's insulating sleeve. This was wrongly re-assembled at some time in the past.



The rear of the movement looks to be in quite good condition with the exception of the Contact spring which looks to be a very stretched replacement. The fork though shows signs of wear on the fibre and silver contacts. The close up photos on the next page show the problem in more detail.

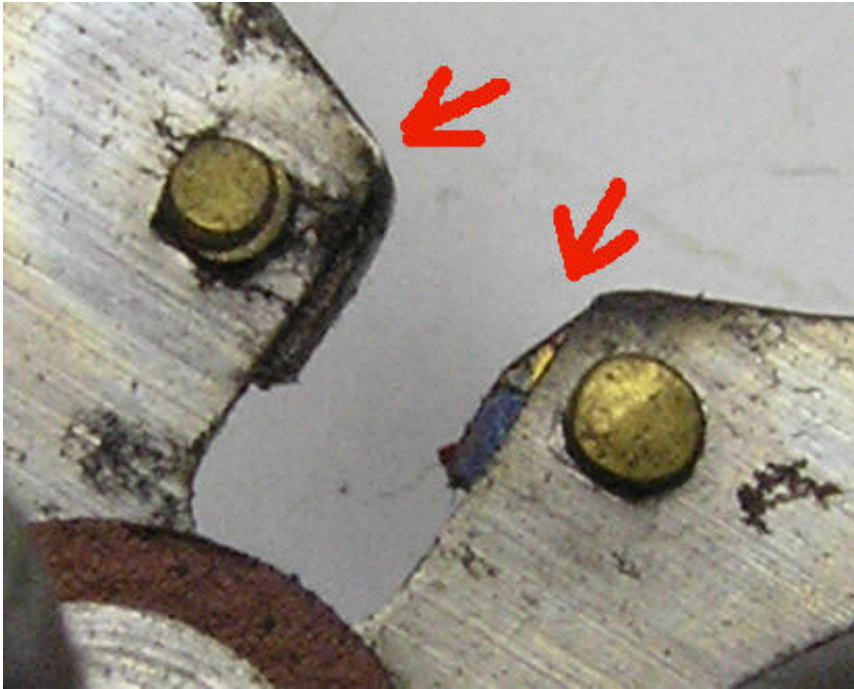
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This photo clearly shows the wear on the silver contact. The result is that the contact pin is starting to wear on the hard steel of the fork. The other side shows where the fibre has also worn away leaving the pin to contact the other side which would then allow the current to make an intermittent flow to the coil in the pendulum at the wrong time and so decrease the amplitude of swing.

Altogether, not a good condition for the fork assembly to be in. We shall need to replace both sides., silver and fibre.



The Horseshoe magnet has been painted at some time in its history. Note that the area that was under the retaining brass rings is left unpainted suggesting that it was painted after manufacture. This paint will be removed and the magnet polished with Grate Black.

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The base after cleaning, staining, sealing and polishing. The silver plate was removed and cleaned separately, the silver pins removed with tweezers. After cleaning the plate was lacquered to resist tarnishing. The oak had a good patina which has been retained with just a little more depth of colour obtained with the stain. The base is now ready to accept the column.

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The base and lacquered column reunited ready for the movement and pendulum assembly.

The fork with new silver and fibre contacts. The new pieces have been riveted in position and roughly shaped. Final shaping and smoothing will be done when the movement is checked in position with the Contact pin of the pendulum.



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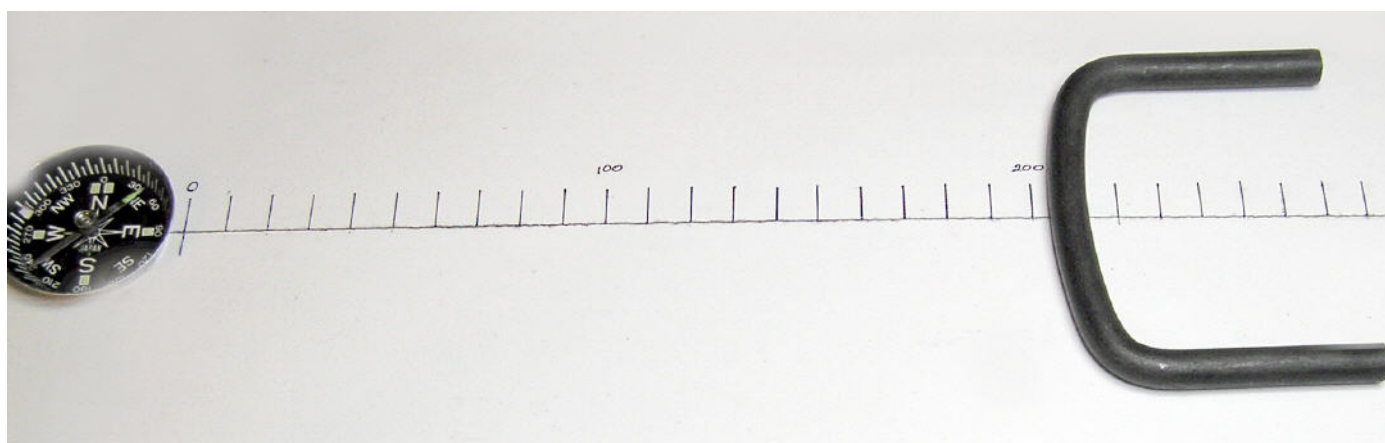
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The pendulum reassembled ready for hanging in the frame. New insulation has been added to the connections from the pendulum bob. The new "T" piece has also been made and added to the contact pin assembly. The whole assembly has then been tested for continuity and a resistance. The reading in this case was a steady 1170 Ohms.



A simple Magnetometer to check the comparative strengths of Bulle magnets. A board with a compass permanently fixed to it, is lined up so that the needle points North. A scale is marked on the board along the East / West line. A magnet is then introduced along the scale from the right until the needle is deflected 45 degrees from North. The scale is in millimetres, marked at 10mm intervals. In this case the magnet deflects the needle to 45 degrees at about 205mm which is right for the Bulle. Before I re-magnetised this one, it read about 170mm. I re-magnetise any magnet that falls below 180mm.

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The Magnet and pendulum reunited with the frame and base. The height of the pendulum is checked for length so that it is about 4mm off the base. The hairspring coil at the top will be reconnected next and the whole circuit tested for continuity again. I always find it prudent to keep checking this at every stage just in case you introduce a problem. It's better to find out now than later when the whole clock is rebuilt.

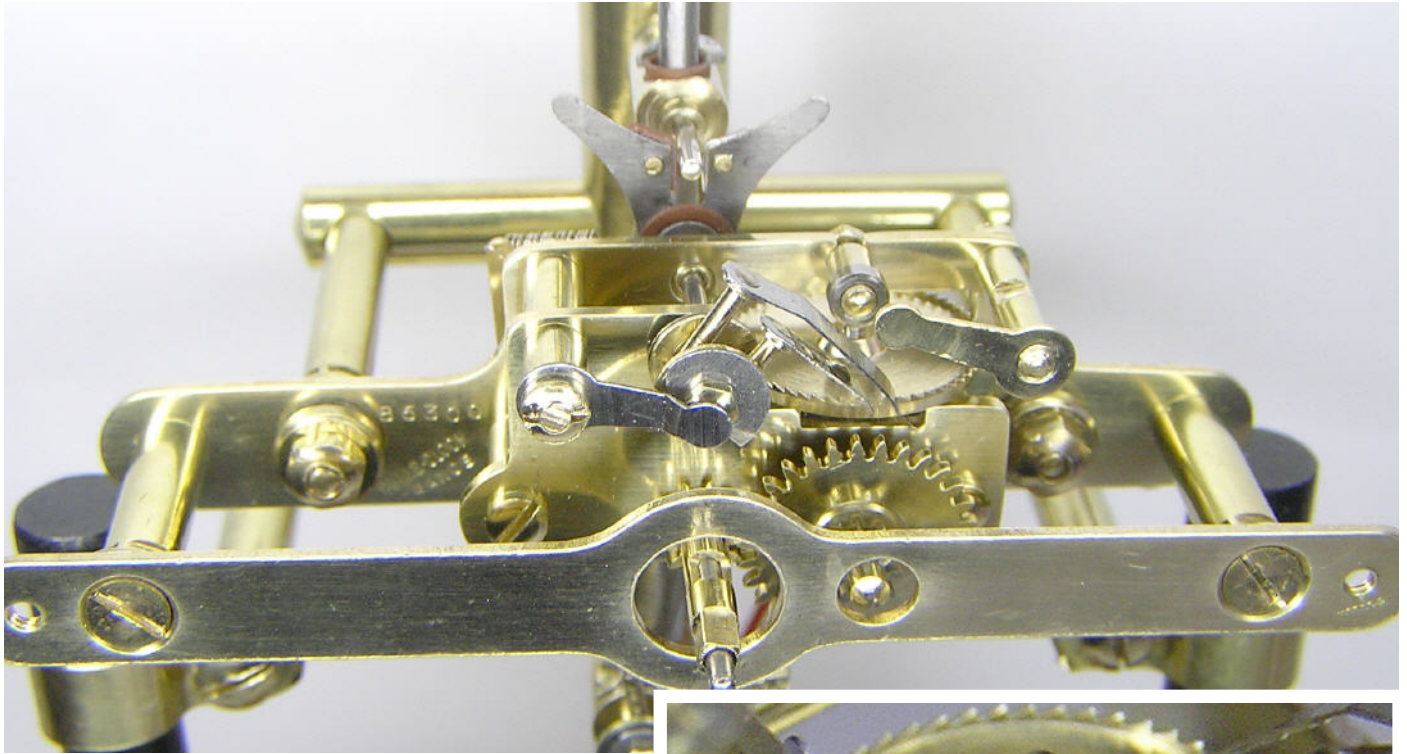
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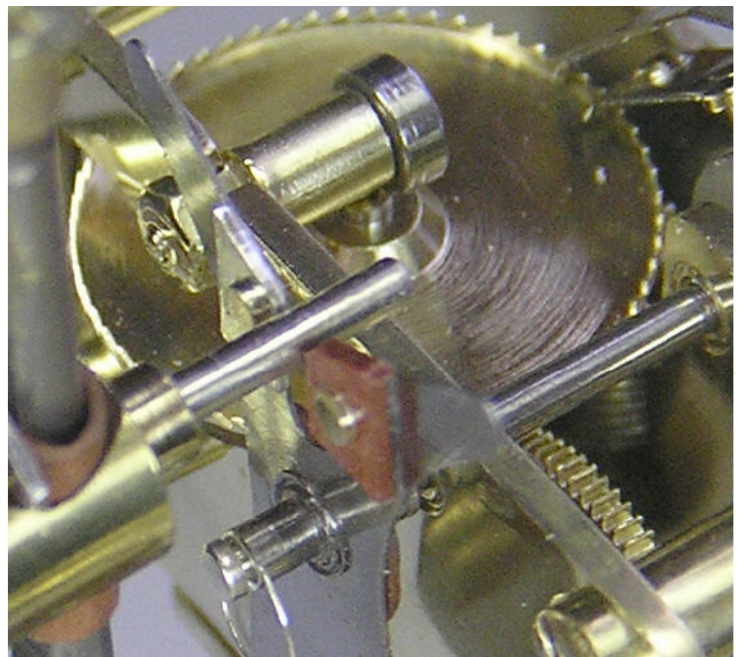
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The movement finished and in place on the frame. Note the depth of the contact pin in the fork. This should be adjusted up or down to suite the pawl throw. The small pawl should advance the wheel one tooth at a time only.

The second photo shows the fork and it's new silver and fibre contacts.

The loop of the silver contact spring can also be seen in the groove of the silver end of the fork arbour.



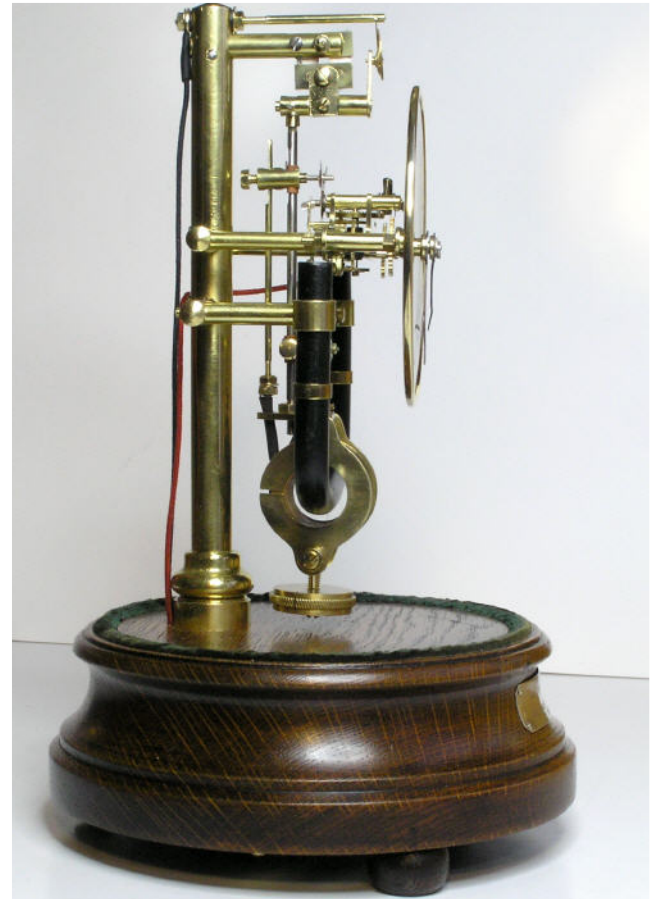
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The finished clock ready for a weeks testing. The minute hand has been riveted back on the collet and polished. When the battery was connected for the first time the pendulum immediately started to oscillate and a good amplitude was gained in about 20 seconds.

END

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