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Bulle Clock Serial Number 190613

# Restoration of Bulle Clock Serial Number 190613



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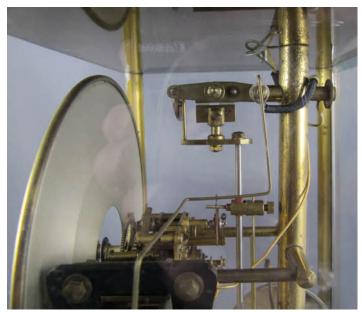
#### Photos by Kind permission of the owner.

This four glass model has a <sup>3</sup>/<sub>4</sub> length penduwith striking lum mechanism. Utilising a small bell attached to the clock frame via an arm on the left side behind the dial. The strike mechanism itself is exactly the same as s/n 255595 other than using a round hammer instead of the leather hammer used for a gong. Overall the clock looks to be in good condition without any madamage jor or alterations. The problem with these four glass cases is that the clock cannot easily be adjusted once back in the case as there is only one door at the front. And because of the method of holding the glass and the fact that the wiring has to go over the top and down the side of the door, it is extremely difficult to take it apart and put back together again. So if you do restore one then be absolutely sure it has a long testing time before re-casing it.



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This group of photos show the movement before dismantling. Note that the strike mechanism is the same as s/n 255595. The bell is attached to the side of the frame and looks to be a typical bell from a French "Black Slate" clock.

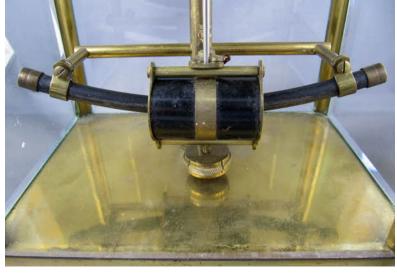


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The base plate has no visible holes for screws so it can only be held in place via the four pillars which must be screwed in from below. Note the decorative brass end caps to the magnet. These are typical on four glass Bulle clocks.





Each of the four pillars is numbered and punched with small dots to show their position in the case.

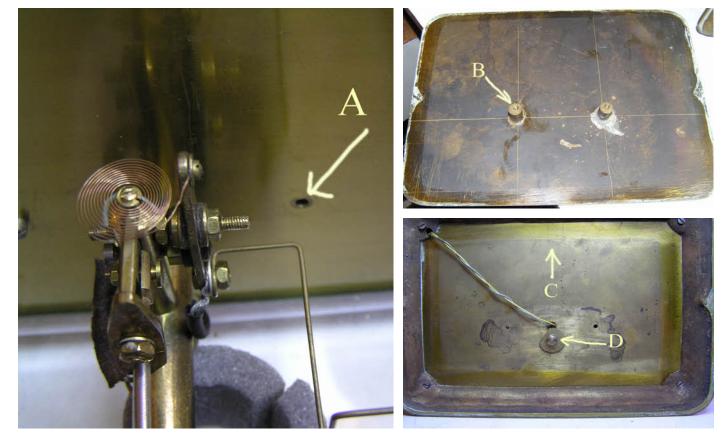
The case plinth and base plate are shown with screws in place which extend through both to sure each pillar in place. There is also an extra hole on the door hinge side which allows the wiring allows the wring to pass through to the battery holder underneath.

Page 4

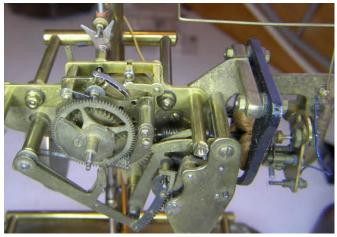


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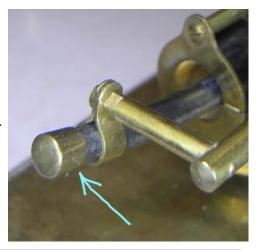
**Bulle Clock Serial Number 190613** 



There are two brass plates and one casting that form the top of the clock. The photo on the left shows the polished underside of the first plate with a hole A) which holds the screw which passes up to the second plate B) and secures it to the top of the clock acting as a cover for the wiring. The casting is held in place by the four pillar screws. The final photo shows the the orientation of the clock with the arrow C) point to the front of the clock. The wiring can be seen coming from the rear of the mechanism across the top between the two plates and down the inside of the door frame via the hole in casting. Note the hex head screw D) that secures the movement frame to the top plate.



On the left is the movement and strike mechanism as seen after the dial is removed. On the right is a close up of one of the magnet end caps.



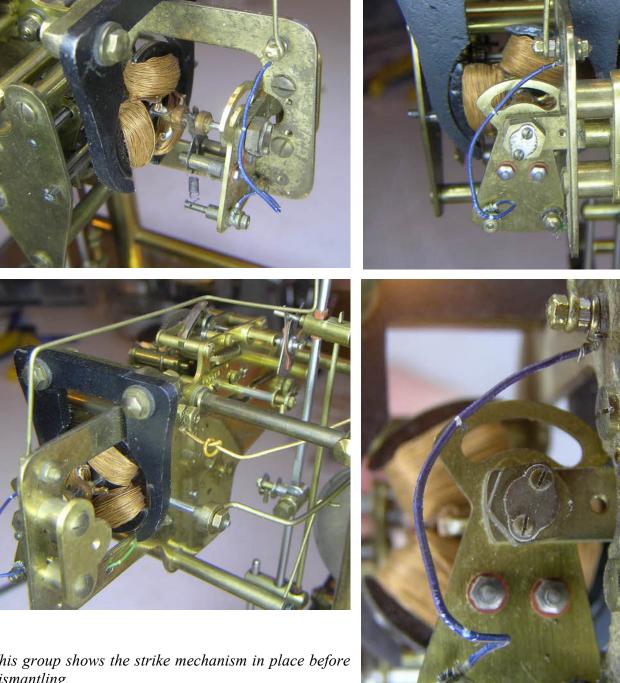
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This group shows the strike mechanism in place before dismantling.

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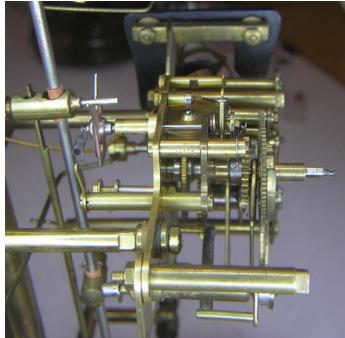
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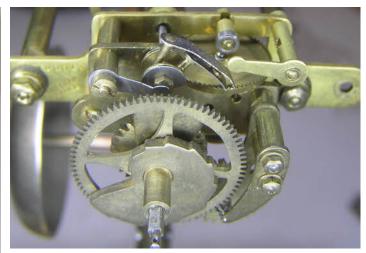
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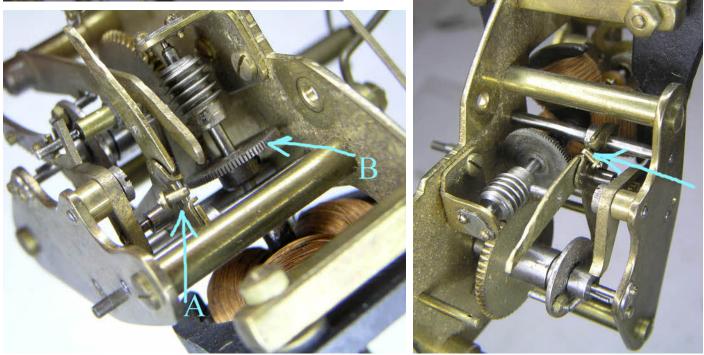


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A side and front view of the movement showing the changes to the standard motion work to accommodate the rack strike.



These two photos show the ratchet wheel B) an the remains of the ratchet pawl A). I can only assume that this ratchet was in contact with the wheel at all times and stopped the motor from running in reverse. The three striking clocks I have seen all have this ratchet removed or made ineffective. It must have caused a great deal of wear to the ratchet and proved to be useless after a short time. The ratchet wheel is therefore redundant and can only act as a small flywheel for the motor arbour.

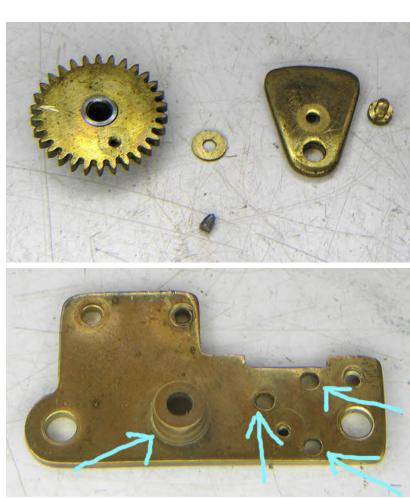


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Rear view of the movement after the strike mechanism is removed.









This group of photos shows the motion work and the changes to the movement plate to accommodate them.

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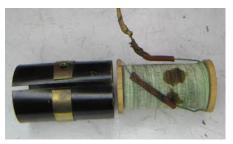


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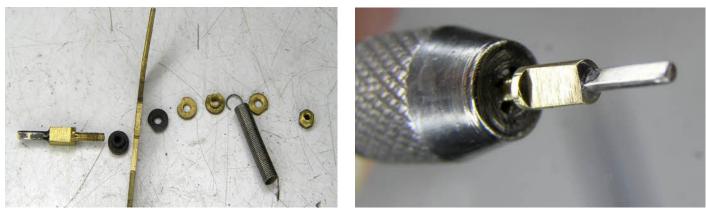


Here we can see the method of securing the frame to the base plate. A large nut and washer either side of the base plate allows the frame to be positioned as required between the top and bottom plate allowing for free pendulum swing and the securing screw at the top of the frame.



Above is the coil assembly which proved to be in good order with a good resistance.

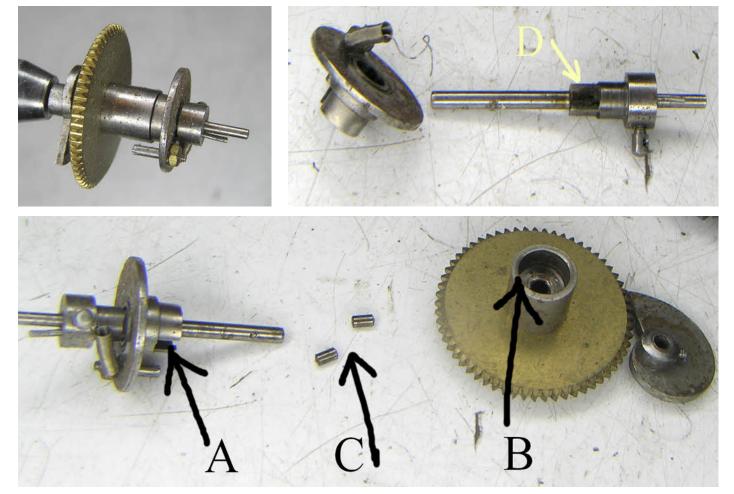
The two photos below show the silver contact pin assembly and a close up of the contact pin itself which is D shaped so that when disengaged at rest it does not make contact with the silver piece on the rack and therefore the motor is isolated and stops.



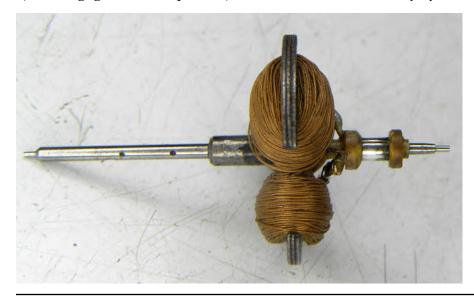
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The hammer and rack lift arbour. The two rollers C) sit in the two recesses A) which are enclosed in the shell B) and engage with the square D). The wheel is driven directly by the motor worm wheel.



The motor arbour showing the two dimples for locating the grub screws which accurately position the ratchet wheel and worm.

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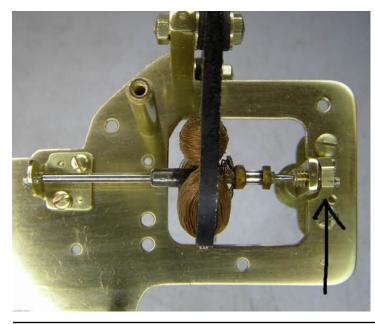


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The strike mechanism which has now been completely stripped and cleaned in the ultrasonic tank ready for polishing.



At left is the motor arbour being tested for end play via the hexagonal nut. When correct then the contact plate shown on the right can be added and the springs connected.

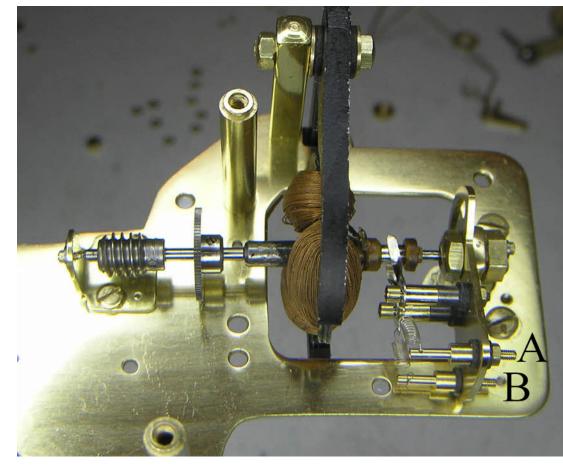


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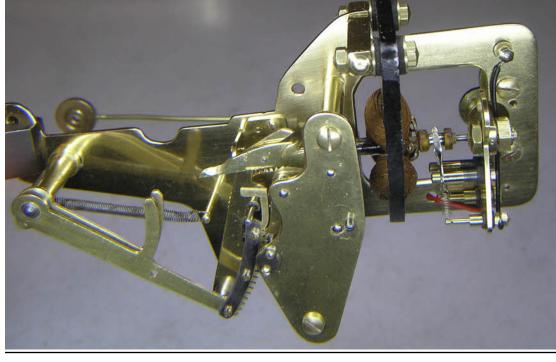


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Here we see the striking mechanism main plate with just the motor added ready for running tests. A 1.5v battery is connected to terminals A and B and the motor should run easily. The end play is check for a small amount of movement before both the end pivots are oiled.



Here the strike mechanism is completed and further tested to make sure the silver contact pin operates correctly by engaging the silver strip on the rack thereby switching the motor on and off at the appropriate times.

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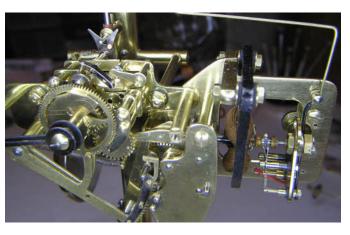
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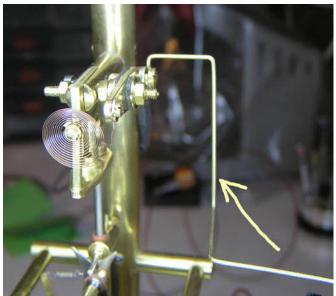


Above is the frame, pendulum and base plate reassembled to test height and freedom of pendulum movement. The pendulum and magnet can be tested at this point without the movement or strike mechanism.

The three photos on the right show the completed movement and strike mechanism re-united for testing the rack drop. The arrow shows the strange method of joining the negative batter terminal to the strike mechanism.

The last photos shows the suspension assembly.







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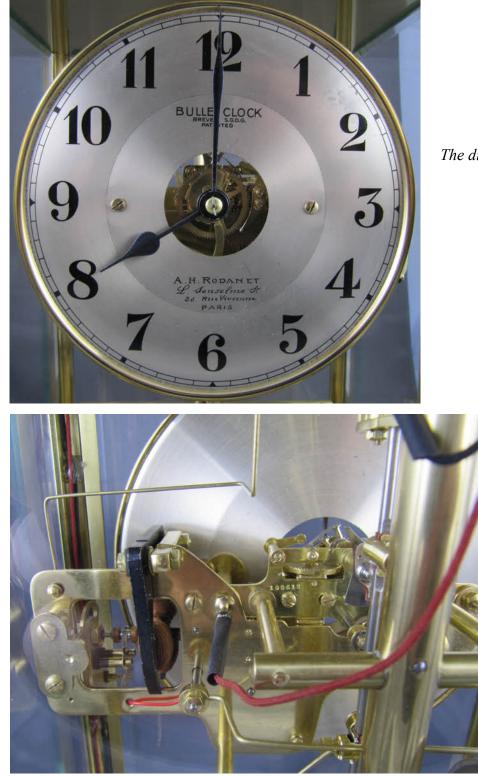


Two shots of the right and left sides of the completed clock.



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The dial and restored hands.

*The rear of the completed clock.* 

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The Finished Clock

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