

Horologix



The place to come for all your Bulle and Eureka restoration parts.

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Bulle Clock Serial Number 201051

*Restoration of Bulle Clock
Serial Number 201051*

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*Photos by kind permission
of the owner.*

*This clock is a tall move-
ment in a four glass case ,
the top and bottom of which
are mahogany, while the
verticals are of brass. The
glass, verticals and top have
been retained by the owner.
The movement is a two plate
version dating from about
1929. The coil casing is a
brass shell painted black
with a brass central band.
On some clocks the band is
only infered by leaving the
central area clear of paint.
The hands are of the fine
spade type on a dial of
printed card.*

*First impressions are, that
the clock is complete in
good order. But first im-
pressions can sometimes de-
ceive you as we shall find
out later.*

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The rear of the clock showing that the tube looks to be free of any serious battery acid burn through.



Some people ask about the seemingly modern fork that are found on some Bulle clocks. These are original and are some form of reinforced early plastic. They can come in a range of colours from clear through Blue and Red. I think the use of this material came about as an evolution from the simple early silver contact and fibre to the multiple insulated "S" silver forks initially found on clockettes. The latter were quite complicated affairs involving insulators on each rivet and arbour. This could be simplified if the fork was non conductive. And so this early plastic was used. But it was not as successful as hoped for two reasons:-

1. It wore down quicker than steel.
2. The whole assembly could not be riveted up so tightly for fear of damaging the plastic fork

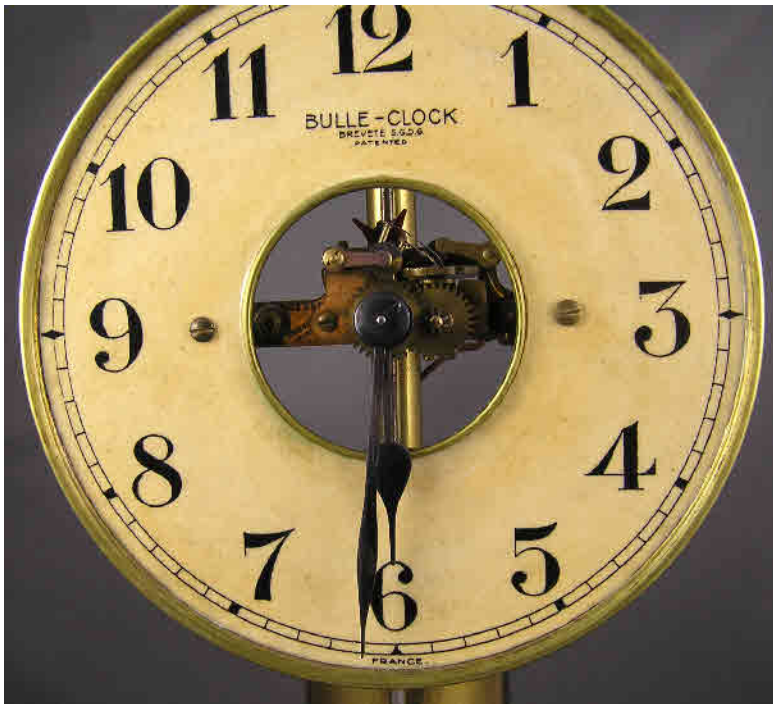
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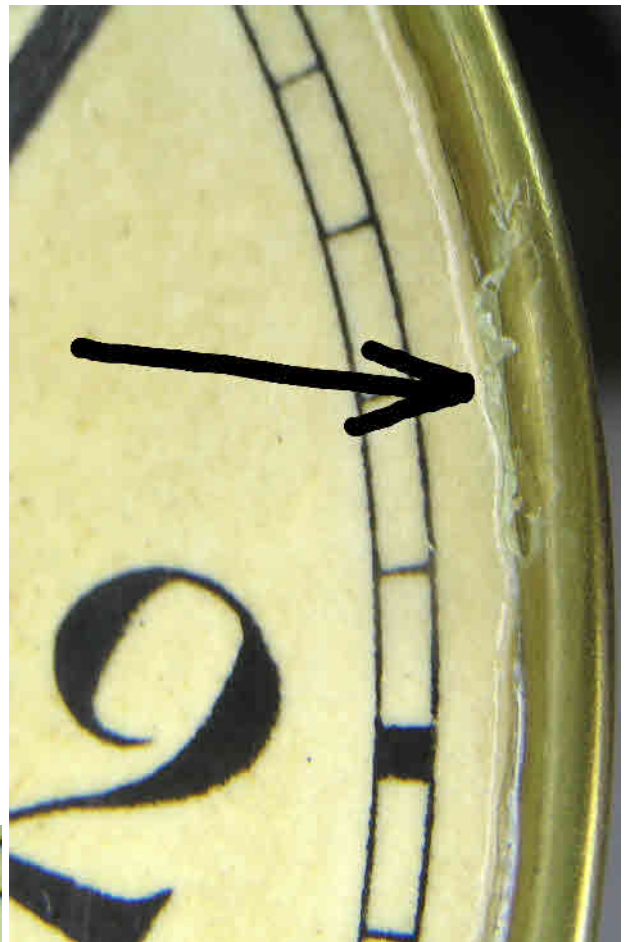
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The first photo shows the dial in situ and all looks to be in order



On closer inspection however there is found to be a film of a waxy plastic substance that covers the dial card and the rim of the brass surround. This may indicate that the dial is a later insert and has been sprayed over with a form of plastic protection. The surround itself looks as though it has been pressed in further than one would normally expect. The last photo shows that the print quality is not the normal standard of an original and may be a copy. Altogether I would suspect a card insert has been added to this dial albeit nicely done. All we need to do here is remove the waxy material from the brass surround so that it can be cleaned but leave the dial itself untouched. A sharp craft knife will be used around the edge of the card so that the covering will peel off the surround without damage to the dial.

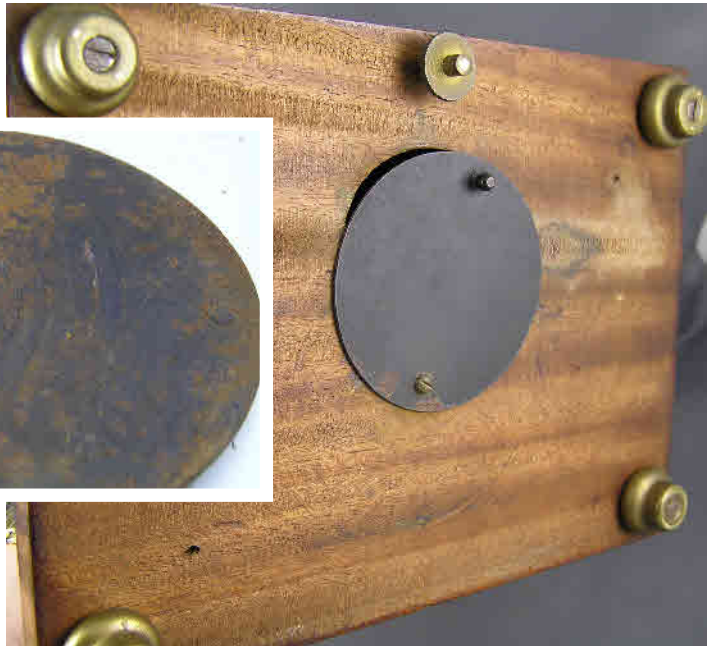
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This set of photos shows the base which is in good condition and will only require a good polishing with wax polish. The battery compartment door however will need to be stripped and cleaned of all rust before re-spraying. All the feet and knurled height adjuster are in position and original.

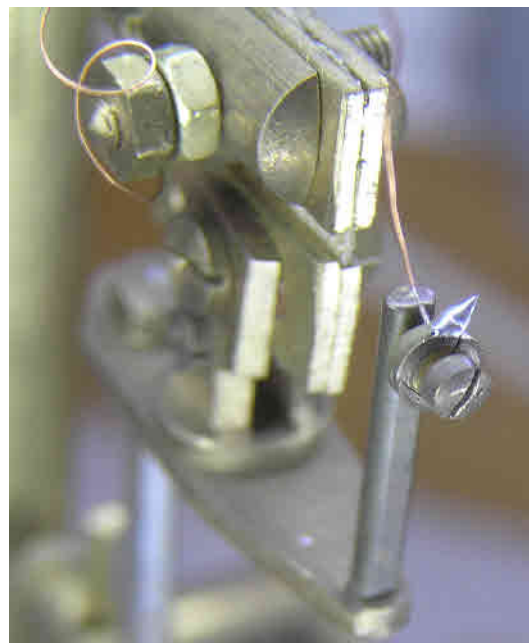
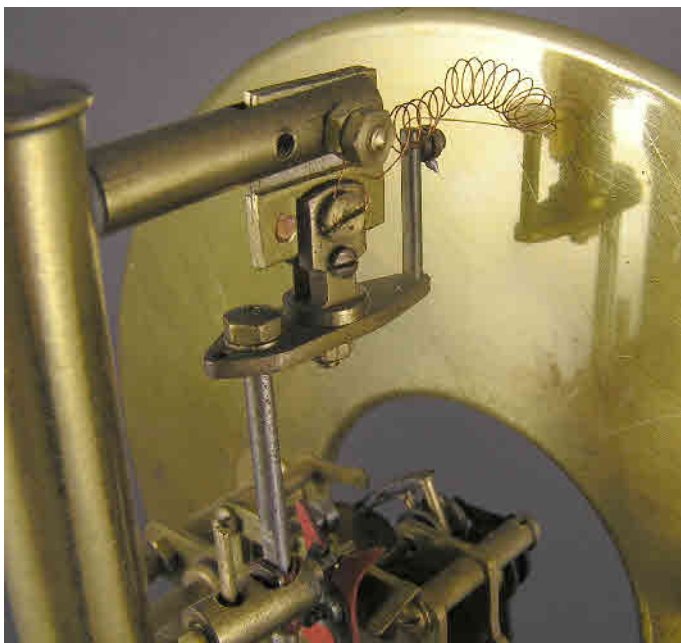
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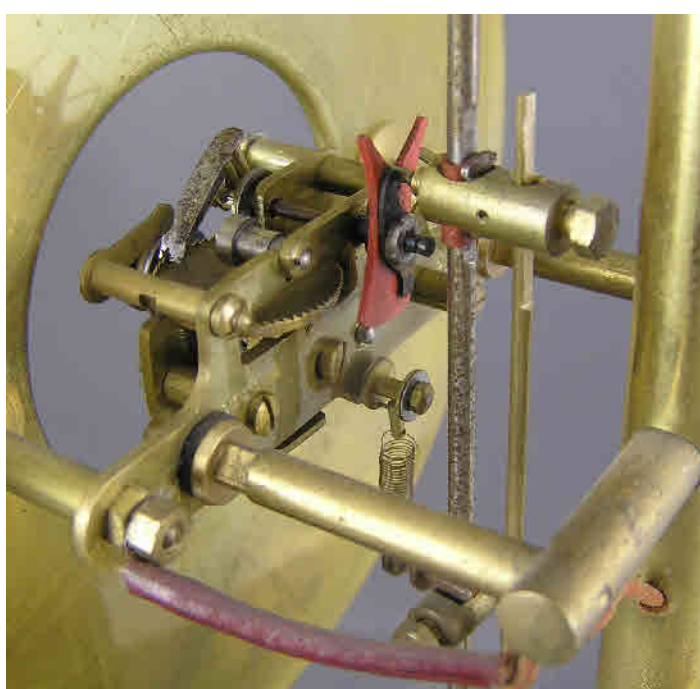
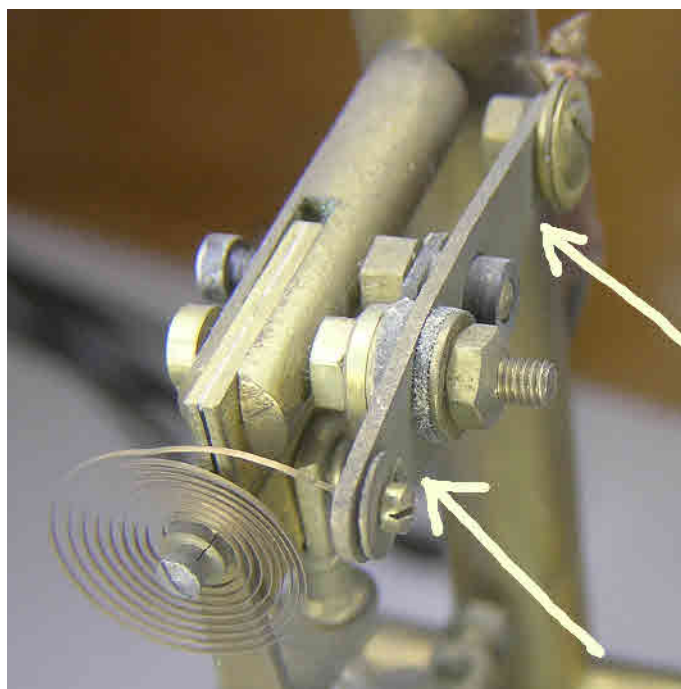
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This is where the problems start. Note that the pendulum support has provision for a balance spring contact arrangement with the top of the frame column (two photos above). But the column does not have the matching assembly that would normally be seen, as in this photo of another clock below. (arrowed). Also note that in the photo at bottom right the Isochron spring is suspended from the main plate via a small lantern assembly. This should be hung on a small bracket that would allow the lantern to be raised or lowered thus providing extra adjustment for the Isochron Spring.. Both of these omissions add extra weight to the idea that this clock may be a marriage. I do emphasise “may”. We will look for other evidence.



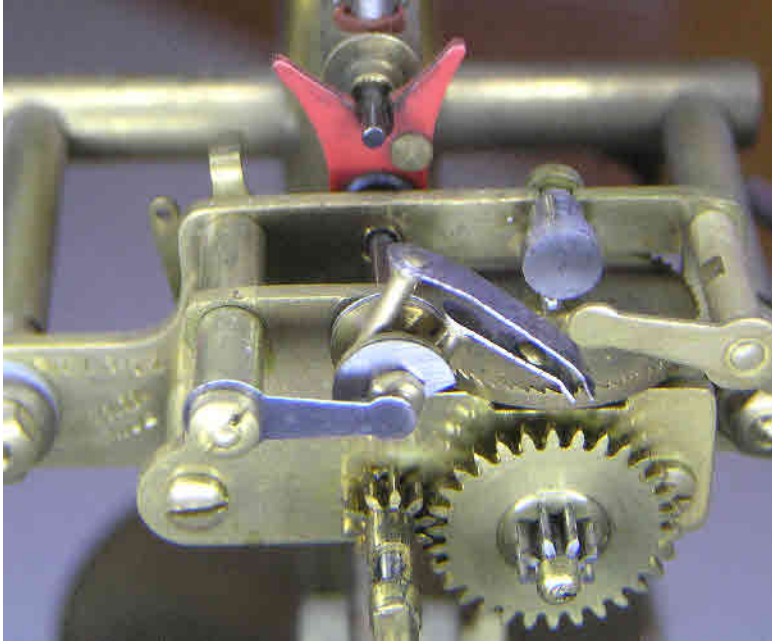
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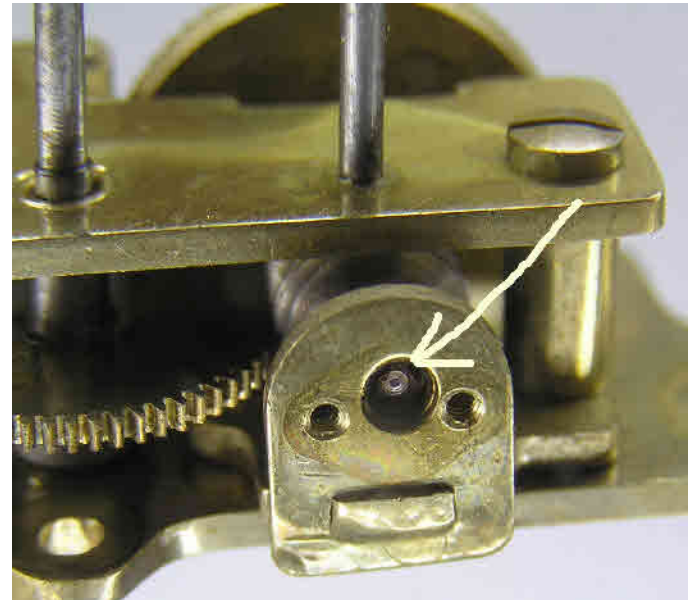
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The rest of the movement looks to be OK and original. But the count wheel end shake plate looks to have some ominous signs of wear in the arbour if the detritus in the photo at bottom left is anything to go by. The photo below right shows where the plate normally sits and we need to disassemble this completely to investigate.

When this was investigated there proved to be a little wear in the button at the end of the arbour but this was negligible and the arbour end was re-polished. It was then checked to see if it provided enough clearance for the count wheel before reassembly. It was fine.



The photo at left shows the odd insulating washer made from nylon. The three other washer proved to be original. This just means that the last restorer probably dropped and lost the original and therefore made one from materials at hand.

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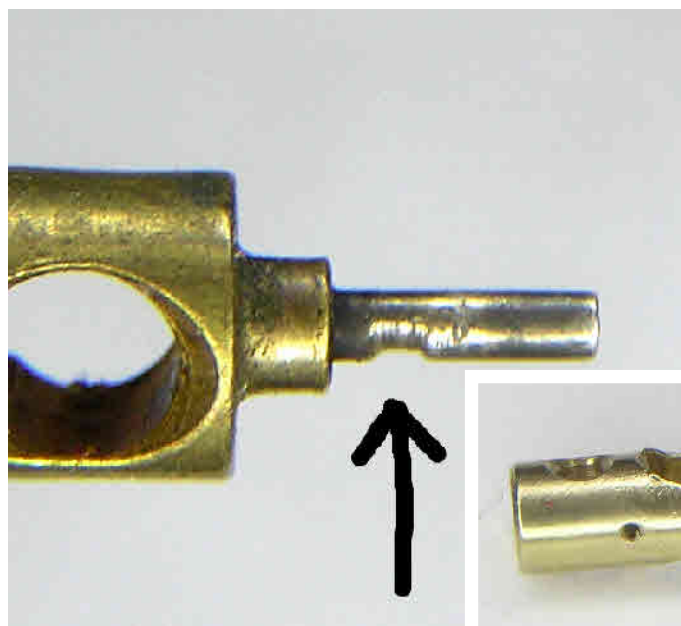
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The negative connection from the battery was soldered to the inside of the tube. This is the wire that would have been projected through the top of the frame and been connected via the balance spring assembly if it had been original. Another little pointer to a made up clock.

These two photos above show that the column and label had been in position for some while as there has been a build of polish over the years. This is a good sign that the clock has probably not undergone any changes in recent years.



These last two photos at left show the wear in the silver contact pin. It is possible to turn the whole contact pin assembly upside down to use the fresh face of the pin. But I decided to make a new one as can be seen in it's embryonic stage before shortening.

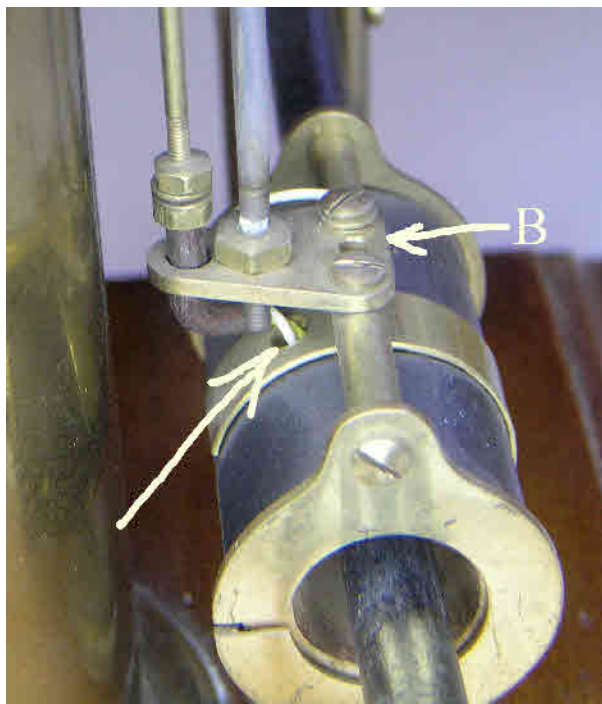
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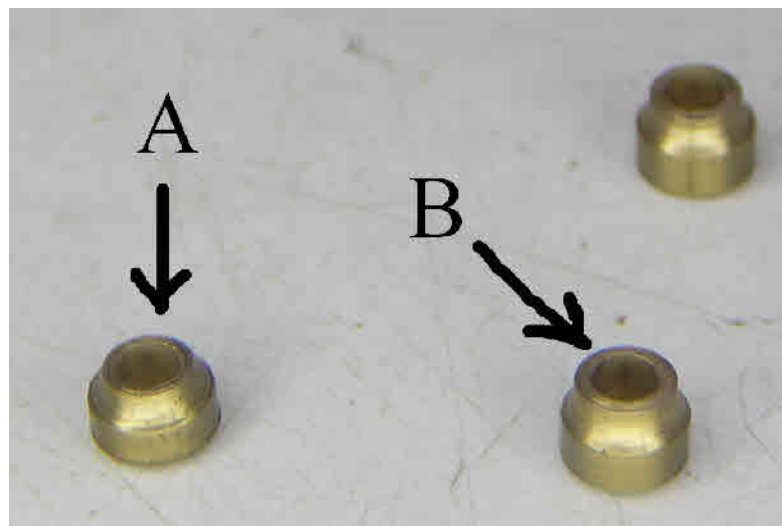
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This photo shows the pendulum and coil cover. Note that the two wires protruding through the hole are plastic covered and therefore not original. Another sign that the clock has been heavily restored. Another odd point that if taken in isolation would probably not be noticed but with all the other variations, becomes more interesting, Note the amount of threaded steel pendulum rod protruding from under the triangular bracket (B). This is quite excessive and is impeding the exit of the wires. This part of this rod would normally have thread showing equally above and below the bracket. Another sign of tampering.

When the clock was eventually reassembled I changed the position of the bracket but this proved to lengthen the pendulum too much and the clock ran very slow and could not be corrected by the rating nut. So it was repositioned as above to correct the timekeeping. Perhaps this pendulum has been taken from another clock???



When the clock was disassembled it was found that a small number of the screws, nuts and washers were replacements. But they were well made and functional but not of the correct design or proportions as can be seen in the two examples above. The heads of the long screws in the photo at left are much larger than the originals and not polished. The washers in the photo at right are incorrectly shaped and inconsistent in profile. Look at the difference between A and B. There were other instances of odd nuts and screws. My impression was that they were made by an engineer and not a horologist. .

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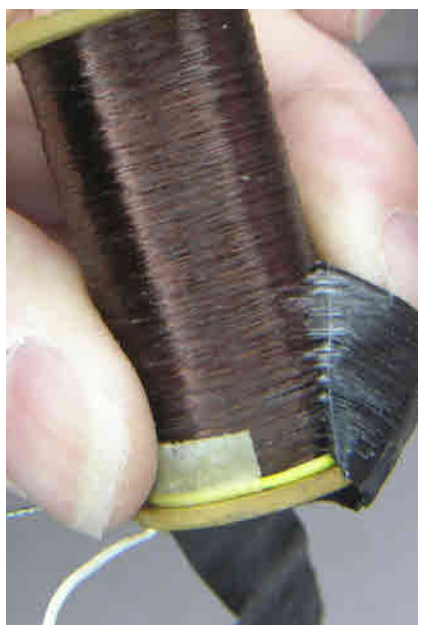
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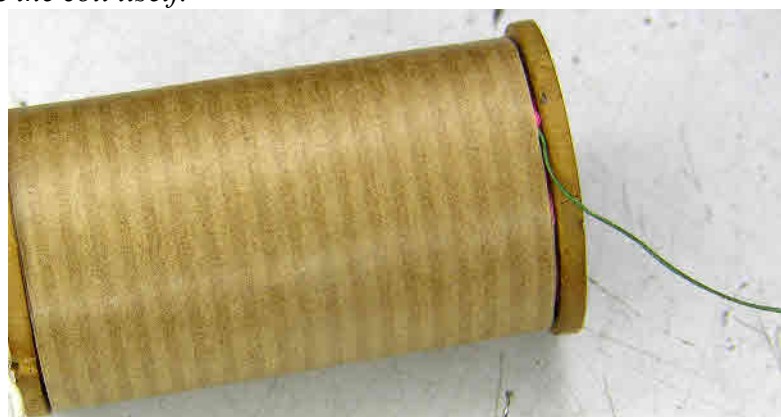


What finally clinched it for me was the state of the coil. As it was removed from the casing I saw this odd colour of the coil wrapping. It turned out to be a heat shrink material and is definitely not original. In fact I have never seen this done before on any Bulle clock. (But I do admit it; 's a good idea if you are making a new coil. It certainly keeps the wire in place).

The photo of the end of the coil shows that someone has written 800 Ohms. This is about 300 Ohms less than it should be and will give one hell of a swing, but short battery life. The coil therefore had to be extended with a couple of thousand turns to make up for the shortfall. The photo at left shows what was found under the pink heat shrink! Not so good. This is insulation tape and it tends to degrade over the years and it proved difficult to remove carefully so as not to damage the coil itself.



The coil was extended so that it read approximately 1140 Ohms. The coil was then covered in brown paper and inserted back into the cleaned and painted cover.



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Another made up piece. This is the long brass bar that carries the current from the contact pin down to the coil. Note that it has been soldered in a half housing type joint.

There was some acid burning to the inside of the column but not enough to have eaten through to the outside. The column was immersed in horolene for 30 minutes before being immersed in white vinegar for a few hours. Finally it was left in Bicarbonate of soda for an hour. A long toothbrush was used to scrub the area every twenty minutes while in each solution. This cleaned any residual acid from the area and should prevent further deteri-



The new collet and fork on the old arbour. The old fork proved to be inconsistent in operation and it was decided to replace it with a more robust and electrically sound fork.



These two photos above show the “engineered” versions (another indicator of major rebuilding) of the dial support washers as found, and after a quick rub with 600 grit...



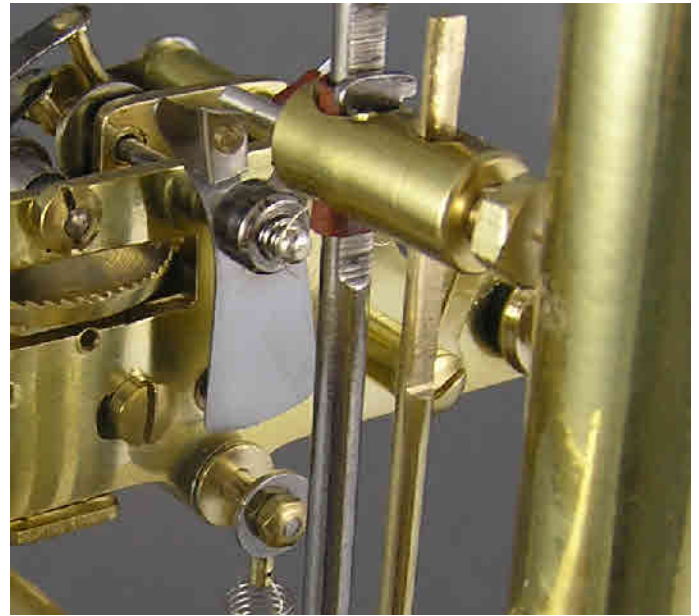
The photo above shows the new pendulum suspension screw and nut. This shouldered screw allows the pendulum to move slightly back and forward to enable it to swing clear of the magnet on a sloping surface.



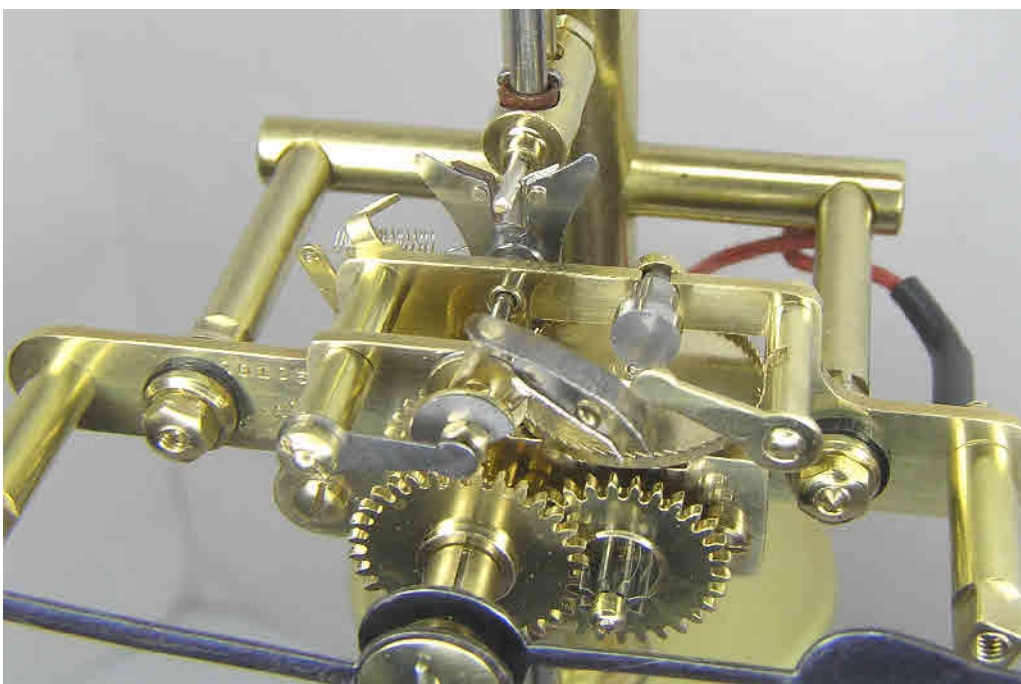

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I finally decided to leave much of the clock as found.. It was electrically and mechanically sound, and to put it into a condition that it could be perceived as “original” would have required major additions that could be construed as “misleading”. Aesthetically speaking not many people would notice the difference anyway. I considered it best left as is.. The photo at top left shows the new balance spring linked using the existing frame and pendulum connection points. At right can be seen the new fork in position. Note the loop of the silver contact spring sitting comfortable in the groove of the silver arbour end. The action is one of rolling and not rubbing.

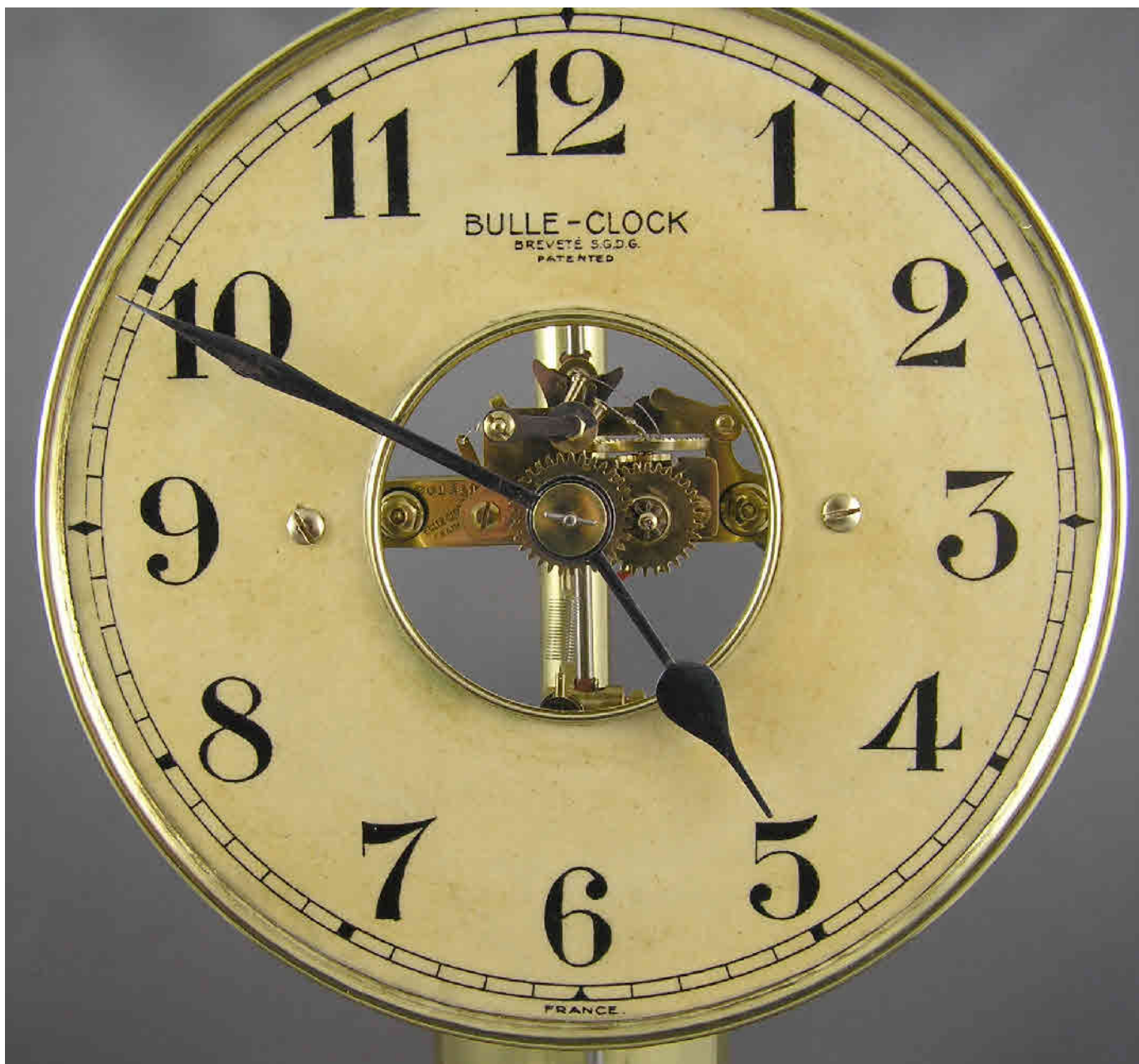


The movement back in place on the frame.

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The dial with the excess waxy plastic removed and the brass cleaned and polished.

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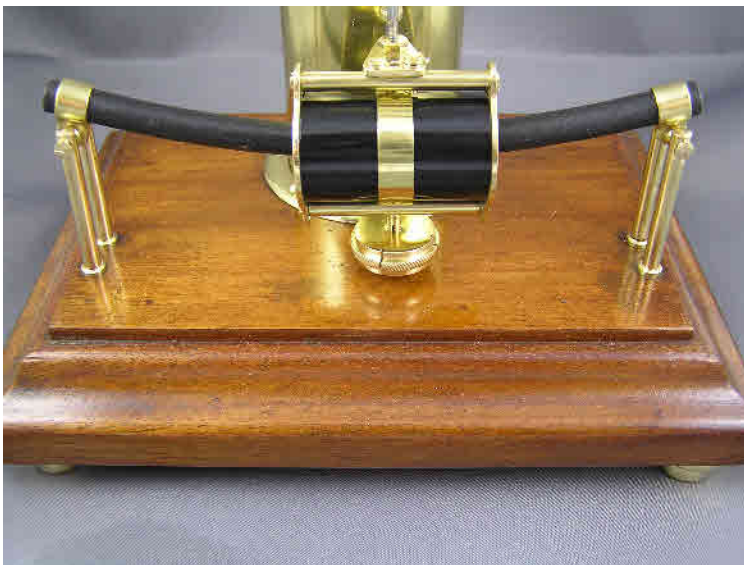
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The underside of the base showing the cleaned and painted cover.

The photos below show the polished base, column, pendulum and movement back in position. The coil casing has been painted black.



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The completed Clock