

Initially presented May 13, 1996.

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Fitting a new silk thread pendulum.

Robert A. Beaver <beaverra@am.npt.nuwc.navy.mil> wrote in Clocksmiths, in response to a question of fitting a new silk thread pendulum.

The block that comes with these pendulums is like other new parts (hands, for example) for French clocks - it doesn't fit any French clock ever made. Yes, you must file down the block to fit the crutch - after filing a few by hand, I got bold and starting using a grinding wheel to remove the bulk of excess material, then finish by hand.

The pendulum wire must be cut to the proper length for your movement. The length you want should be marked on the back plate of the movement, near the bottom. Look for two numbers separated by a space. These represent TOTAL EFFECTIVE PENDULUM LENGTH in an arcane measuring system. To convert to inches, I use multiplying by 1.06 as a rule of thumb. If the numbers were "6 8", then I would plan for ~7.2 inches. Remember that this length will INCLUDE the loop of silk thread that the pendulum hangs from. I plan for the loop hanging down about 5/8" to start with, so the pendulum in my example would be about  $(7 \frac{2}{8} - 5/8 =) 6 \frac{5}{8}$  inches long from the MIDDLE of the bob to the top of the crook.

The steps in modifying the pendulum are as follows:

1. Cut the wire to the correct length, allowing an extra 3/8" for forming the crook at the top.
2. Remove the brass block and work it down so that it has a sliding fit in the crutch fork.
3. De-temper the first half inch of the wire.
4. (Optional) Work the end of the wire into a 1/2" taper, coming to a fine point at the tip. (This was always done on original pendulums.)
5. Slide the brass block back on the wire.
6. Form a shepherd's crook in the end of the wire. Re-blue the end.
7. Hang the pendulum on the movement, and note where the brass block should be on the wire.
8. Hammer the brass block so that it has a tight fit, but can be adjusted.
9. Run the movement with pendulum in place. Adjust the silk thread for proper timekeeping.
10. Slide the brass block until it is centered in the crutch fork, then hammer it tight, or fasten with a drop of super glue slid down the wire at one end.

That is my method - I'm sure others have variations to it.

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