A Collapsible Test Stand

Solves the Problem of Troubleshooting a Wall Clock with a Case-Mounted Pendulum

Third in a Series
by Scotty Dean (AZ)

I personally love "accurate" wall clocks quietly ticking away with their deadbeat or semi-deadbeat escapements—to me they have such a sense of tidiness and efficiency.

I love them, that is, when they are running well. When one of these clocks needs servicing, and you start to take the pendulum off or take the movement out, you may quickly discover that something is different in their setup. Your initial efforts may show that the suspension spring and pendulum are not attached to the clock movement, but rather to a bracket mounted on the back wall of the clock case. This was often done on Vienna regulators as well as on Seth Thomas No. 2 wall regulators. The subject of this article is shown in Figure 1, which provides a view of the case-mounted bracket for mounting the movement and attaching the suspension spring and pendulum rod.

Figure 1, left. A case-mounted suspension bracket for a Seth Thomas No. 2 regulator.

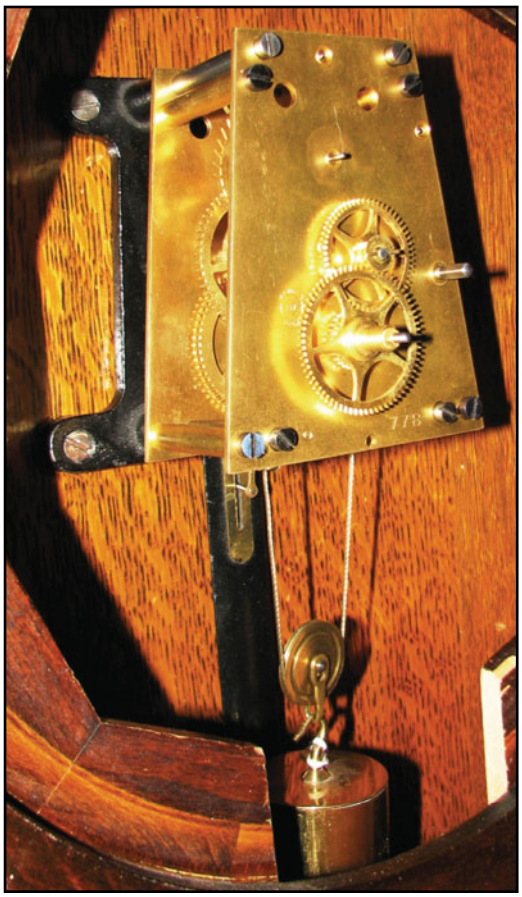

Figure 2, left. The movement and pendulum are mounted in the case—no access is available.

As you can see in Figure 2, you simply cannot "get in there" to see what is going on with this movement. And, even if you have built or jerry-rigged yourself a tallcase clock test stand, it isn't going to work because the suspension is not part of the mechanism.

This inaccessbility has been a bit of an inconvenience for me in the past, but I have been lucky: the earlier movement was cleaned, oiled, placed back in its case, and started merrily ticking away. With the recent Seth Thomas No. 2—even though it is time only—something was keeping it from running well, and I couldn't see it. It was time to build a test stand.

Stationary or Portable?

By now you may have said to yourself, "Just mount the bracket on your wall and hang the clock and let it run; what's the big deal?" Well, I didn't have enough clean and clear wall to mount the bracket and have the pendulum hang clear, and I also wanted to be able to test the clock wherever I needed to. I could have put together a few pieces of 1" x 12" boards, 4' mounted perpendicular to a floor board 3' long—but I would have had to find yet another place to store or tuck away a clock item that I am not going to use very often. I don't need to be tripping over it all the time, and 4' by 3' is a pretty big dimension to try to tuck away!

I was watching television and I saw an advertisement for an exercise machine that can be folded up into a fairly flat piece and stored under a bed. (I'm not going to comment about how long the exercise equipment may stay under the bed out of sight/out of mind), but it did give me the idea for a folding test stand. I decided to use readily available pieces, 1" x 12" boards for the main body, 1" x 3" boards as the stops, and 1" x 4" boards for the angle pieces to wedge in and hold the upright perpendicular. Six boards and four hinges later, I had what you see in Figure 3—not beautiful, but very functional.

Figure 3. The finished test stand with movement and pendulum in place.

Figure 4. Portable test stand collapsed into storage position.

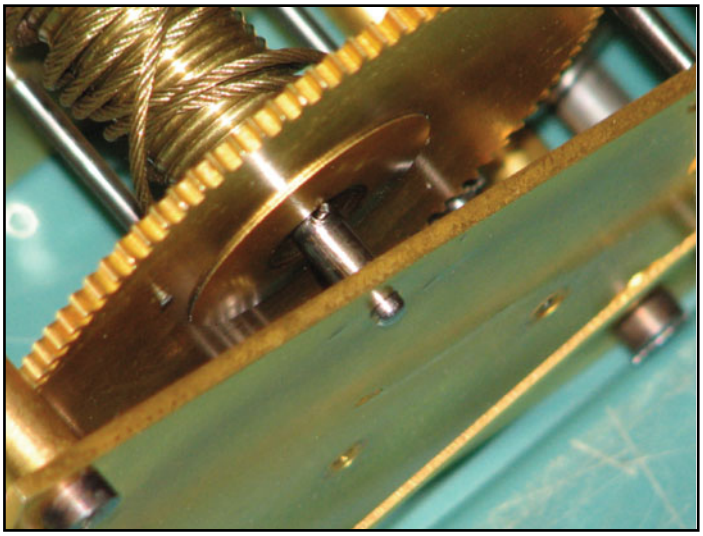

Figure 5. The pin through the arbor on the cable winding shaft had metal fatigue, was bent just a little, and allowed too much play.

Now for the nifty part—the two uprights for the perpendicular piece were intentionally cut and mounted for different heights. This allowed for, upon setup, wedging the longer of the two supports into place, with enough give to wedge the shorter support on the opposite side into place—with the upright at 90° vertical. Differing length supports also allowed for the overlap and the pitch angle for height after collapsing that I wanted for my storage space. As shown in Figure 4, it is going to lie flat on a rafter shelf until I need to test this sort of clock again.

In Summary

The folks at the clock shop were rather surprised when this awkward looking pile of boards in my arms turned into a test stand. I was able to set up the clock, get it running, and finally solve the problem. What had felt like a bad rebushing job when the clock was in the case wasn't the case when I took the movement out and tried spinning the gears again in all directions—plenty of end-shake and lots of free-wheeling. These clocks have a spring mechanism to allow for maintaining power while the clock cable is being wound up. I finally noted that the binding wasn't due to arbor play, but to gear play—the pin through the arbor holding the cup or tension washer in place had become fatigued and bent and was allowing the wheel to have too much side-to-side play. It would eventually bind up in the pinion for the next gear. This was not visible when the movement was in the case, and when I removed the weight and pulled the movement out of the case in my first efforts, the tension was gone and the gear realigned. Figure 5 shows the back of the main cable arbor and the pin at fault.

About the Author

Scotty Dean works in statistical and operations analysis for a hospital in Tucson, AZ. He took a class through Pima Community College in clock repair and was hooked. His hobby has become a passion and a part-time job working at Ye Olde Clock Shoppe in Tucson. This gives him the opportunity to handle and admire some truly incredible timepieces, though there is sadness after the repair and the clock has to go back to its owner. The repair money he earns thus gives him an excuse to purchase more tools, books, and clocks for his own collection.