

Recycling Ammoniated Clock Cleaning Solution

I knew a clockmaker who recycled his clock cleaning solution using an automobile filter. I thought a coffee filter should work just as well, so I tried it. It failed immediately because of clogging. I figured there was too much dirt for the filter to handle, so a car filter would not work adequately either. I was told that when the solution failed to clean, its chemicals were depleted.

I decided to try a technique I used for making home-made wine. I acquired a five gallon carboy and a siphon kit and poured the cleaning solution into it. Three days later, all the dirt had settled to the bottom. The plastic attachment on the end of the siphon makes it siphon from above the tip rather than from below. After filling the siphon with water, siphoning off the cleaner portion of the solution was easy. The result was simple: it worked well again. I added some household ammonia solution (the "sudsy" variety) to it and continued to use it. When it failed again I repeated the siphoning process. The proof is in the age: the solution I still use has been siphoned about seven times and it is now over four years old! It is L&R ammoniated concentrate that I diluted with water. It looks awful. It is definitely dirty. It smells awful. But it still cleans well. Since I could not wait, I made up a second solution. I now use the first for pre-soak. This allows me to wait for longer: the old solution was allowed to settle for a month. I bought the carboy and siphon kit at my local home-brew supply store. I do not use the same carboy and siphon for making wine!



The ammonia (in the form of an ammonium salt) is what causes the brass to shine after cleaning. It also prevents the steel parts from rusting in the water-based solution because it is alkaline. If the solution

no longer smells of ammonia, or has only a faint smell, add about half a cup of sudsy ammonia solution (from your supermarket) per gallon of cleaning solution.

One problem that the ammoniated cleaning solution has always given me, even when the cleaning solution was fresh, is that the dirt and solidified lubricant, frequently found in the lantern pinions of American clocks, would not be removed by the cleaning solution. The ultrasonic machine would not clean them out either. The answer is the brake cleaner (in a spray can) from your auto parts store: I have a large glass jar about two-thirds full with brake cleaner. After placing the gears with the dirty pinions in the jar and shaking lightly for two minutes, the pinions are cleaned. Then just place them on a surface to dry for about five minutes. Brake cleaner (tetrachloroethylene, unless you buy the non-chlorinated versions, which you do not want) is very similar chemically to One-Dip (trichloroethylene), which watchmakers use to clean watch hairsprings. These chemicals have a powerful smell and should be used outdoors or in a well-ventilated area. The magic of these chemicals is that they are powerful organic solvents that easily remove oils and greases, yet they do not leave a residue (unless the solvents are contaminated). Brake cleaner is much less expensive than One-Dip. I have used brake cleaner on the hairsprings of my pocket watches without problems, but I have some One-Dip for wristwatches and for any situation that makes me doubt the results. Note that tetrachloroethylene, trichloroethylene and carbon tetrachloride are all from the same family of chemicals and have similar properties: they are powerful organic solvents (degreasers); they are volatile (they evaporate quickly and leave no residue); they have low flammability (while they do burn, they do not burn as readily as alcohols, for example, so they are safer to use); but they are toxic (tetrachloroethylene and carbon tetrachloride are very toxic and are known to attack the liver, whereas trichloroethylene is toxic but supposedly less dangerous).

Note that the ammoniated cleaning solution can easily remove the lacquer finish of modern clock plates, which I therefore clean by hand using 90% alcohol (from your pharmacy) and a cloth, and toothpicks for the bushings. I use the cleaning solution in an ultrasonic tank for the clock gears and other metal parts (no plastic). Rinse in water and dry (I use a metal box with four 60w. light bulbs in it as a drier, after blowing the parts dry with an air-compressor).

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