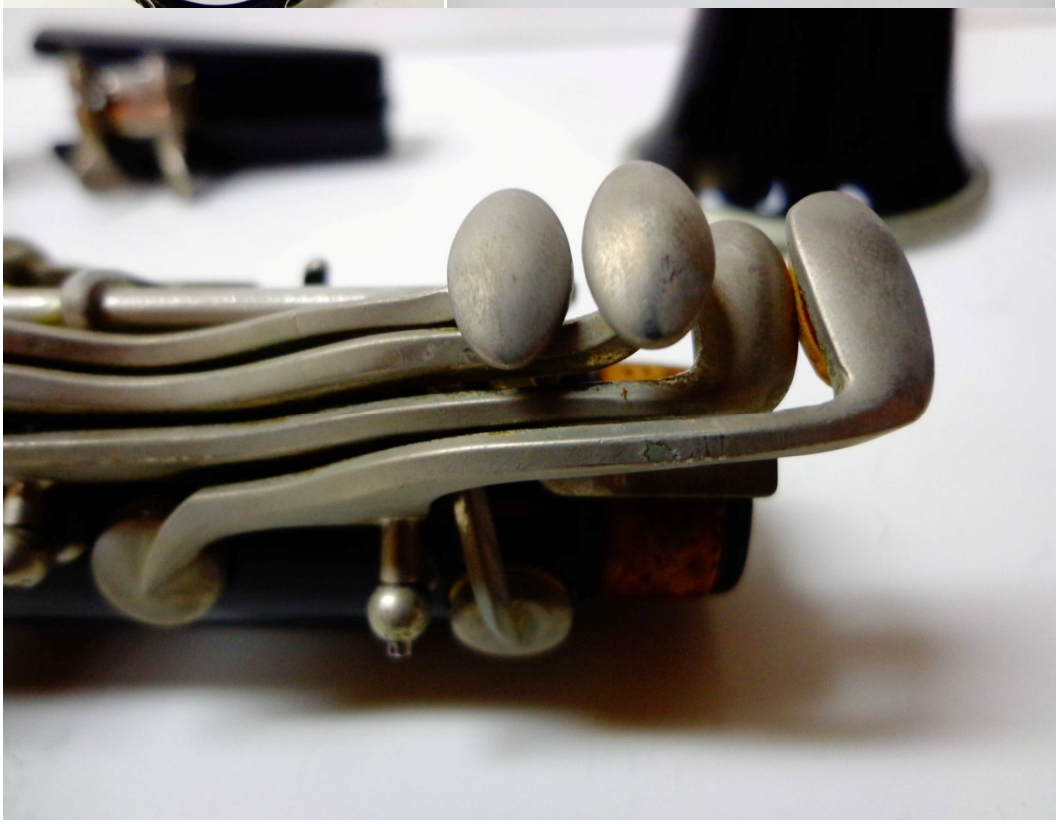
I will be demonstrating exactly what is involved in giving an instrument a Complete Overhaul. In this case an old Selmer Bundy Clarinet will be the patient. I selected an instrument that is in pretty bad shape.



Usually, keys aren't this badly tarnished, but years of improper storage probably allowed heat and moisture to wreak havoc on the plating. But that is cosmetic damage.

Basically, the only difference in buffing a newer instrument and an older instrument is the time spent at the buffing machine. I have spent as little as 5 minutes on some and as much as an hour on others.

The first step is to carefully examine the entire instrument and notate any specific problems that will need additional attention, such as bent keys or missing screws. I usually fix such problems as I'm taking the instrument apart. That way I know everything will work once I finish installing new pads and finishing any cosmetic work.

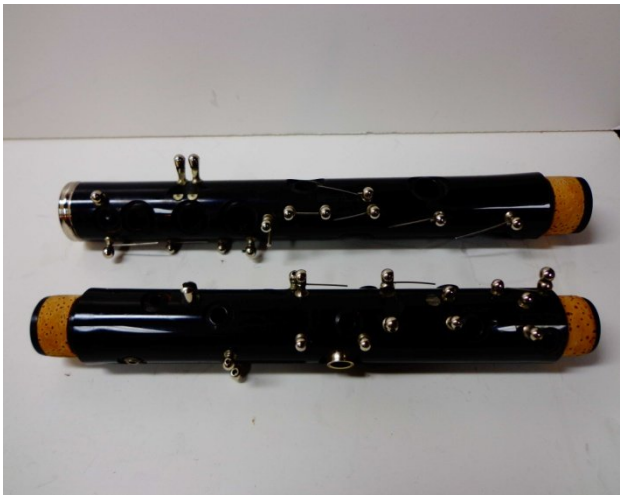
Next is taking the instrument apart. As easy as that sounds, sometimes there are pivot screws that do not seem to cooperate. I have special solutions that work on corrosion, but sometimes the key itself has been bent and that also bent the key rod going through it.

A combination of patience and experience usually does the trick. If it is being stubborn, then I move to another key and let the solvent do the work.

Buffing the keys makes a major difference but it is something that is not always included. If you feel this is an important step and the cosmetic appearance is very important, then be certain it is done. The only time I don't buff keys is if I can't improve on their appearance because they are already in great shape. I have a buffing machine equipped with a special filter, plus I wear a good-quality mask.

The buffing compound I use is considered 'safe', but is still a 'nuisance'. Once I finish, the next step is cleaning the keys with a special solvent to remove any traces of compound. I also put everything on paper towels and dispose of them at each stage of my work.

At this time I clean the body of the instrument and remove any old tenon corks, then buff the posts and rings that are part of the body.



Replacing tenon corks is an art and I'll admit that after 20 years I still take my time and use every bit of skill and experience to make the repair both functional and with great form. Sadly, some manufacturers use artificial cork tape and it just doesn't last like real sheet cork, properly cut and glued, does. I wouldn't think of using anything else!

A good job is in the details, and I believe that every instrument deserves to leave my shop in as best a condition as I can make it, so things like bringing out the trademark and logo is important to me. I also do my best to make a mouthpiece not only clean and disinfected, but as close to 'new' condition as long as it is salvageable.

Fitting the correct size pad is very important, so I keep every size pad in stock in 1/2 mm increments so I can choose the best possible fit.

No, I don't use 'pad kits' that you can buy with a tube of black cement. First of all, those kits are really designed for an Emergency, not a real repair.

The pad sizes are usually wrong, but they will work temporarily. Cement in a tube doesn't allow for a proper seat but will hold the pad for the emergency repair.

Unfortunately, there are plenty of instruments that look just fine but don't play correctly. The instrument shown above is a perfect example. It has new pads and corks and appears ready to play. But the pads have not been seated to the particular tone hole yet.

That is the next step.

I have my own process for seating pads that I find provides a more reliable and lasting seat/seal. Basically, it is similar to the usual re-heating of each pad cup and shifting into place, but my trick keeps the pad from changing shape during the heating and subsequent cooling.

Regardless of what method is used, the important thing is the final result. The instrument should be 'tight' and play well. I make final adjustments during the playing process to 'Alternate Eb' keys and check for proper 'G#/A/Bb' intonation. I play up and down chromatically and make adjustments as necessary.

I take out the lost action in the bridge key. I make sure the ring keys are the proper height in relation to the chimney openings. I adjust the corks on the spatula keys so there is proper function and limited lost action.

There are a lot of minor adjustments that need to be made after the main work is finished.

After I feel everything is playing the best it can for the particular quality instrument, it is time to put the instrument aside. I turn my attention to the case.

Now, while that isn't part of the instrument, to me it is part of the way I feel that you show respect. I wouldn't think of placing an instrument back in a case that had cat hair or glitter or whatever might have ended up inside. I scrub the inside of the case and use a vacuum and lint roller and whatever else cleans the inside fabric properly.

Sometimes there is a musty smell and I have sprays that safely deodorize without adding a scent. (I keep everything neutral smelling) I check the outside of the case and clean that. I have some sprays that help in the refurbishing process, but I'm careful to make certain everything is hypo-allergenic. I check the handle and latches.

Now, I try not to get involved in extensive case repairs, such as broken latches or hinges, etc. That isn't cost-effective for the customer and they are usually better-served by purchasing a new case. But if I find the old case is in good general condition and just needs a friendly hand, then I take care of that.

I look over the instrument one more time, checking every detail like cork on the thumb hold and listening for any clicking sounds that might indicate a missing silencer cork. I check movement of the 'A' key to make certain it begins to move before engaging the 'G#' key. I check for any loose pivot screws or snags from any screw heads that might have to be filed. I check the mouthpiece and make certain it fits the top barrel correctly. I check the ligature and cap.

Since I use my own mouthpiece to test instruments I repair, it is especially important to look closely at those parts I don't actually play.

Finally, it is time to play the instrument again and make certain it still sounds as it should. I try to make it jump octaves, since that would show a pad might have some small or intermittent leak. When I'm pleased with my work, I wipe down the instrument one more time before placing it in the case. The job is finished!