# Buffing

Ed Howard

Platers are becoming scarce, expensive, and the wait is long. Sometimes platers lose or break things. Platers used to do a whole set of hardware in a week for only $50; not any more.

We're going to reface bolts and screws using a technique learned from a guy who works at an auto body shop. The nice thing about buffing is that it's instant gratification.

**Safety**

- Equipment
  - Gloves
  - Eye protection
  - Vice grips
  - Don't buff while wearing long sleeves
  - Don't get rags close to buffing wheels or the arbor
- Pay attention
  - Ed put a large grand on a Harbor Freight dolly and the dolly cracked.
  - Stay within the safe contact zone on any wheel

**Items Needed:**

- Various grits of sandpaper
  - Older pianos often used different sizes of sockets, but they were strong
  - Newer wood screws and bolts are thinner, weaker, not as strong
  - 80-2500 grit
- Drill Press
  - Set up your drill press to work with a foot pedal
- Wheels
  - Wire wheels
  - Buffing Wheels
    - Tight, close stiches
    - Triplic compound through Schaff is the best price
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  - Aluminum Oxide wheels
    - Cooler than a buffer
    - Differences in touch makes a difference
    - Start with aluminum oxide, then go to a soft stitch
  - Compounds
    - Tripoli buffing compound for standard buffing
    - White jeweler's rouge is very fine

- Heavy cloth gloves
- 6” or larger stitched buffing wheel, plus second wheel for cleaning excel compound
- White rouge & Tripoli (red) buffing compound
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**Steel Screws and Bolts**

- Start with a wire brush on a wheel to get the rust off
- Insert screw/bolt into drill press
- Hold folded 80 grit sandpaper to screw head by hand so the slot doesn’t clog
- For flat bolt heads, lower the drill press down onto sandpaper on a wood block
- Especially when the drill press fast, move the sandpaper around so it is fresh, not worn and does not clog
- Change to 220 grit, then 400, 600, 1200, 2000, 3000
- To protect it, use:
    - Carnu=B automotive wax has no clay in it
    - Clear coat it with an automotive eurethane
    - Acrylic lacquer is tough.  Make sure you water sand it and buff it.

**Prep Work**

- Whether it’s new or old, start by hand-sanding, especially to get into cracks and corners
- To test if it’s real brass, scratch the back of it to see if it is plated; or use a magnet
- Red Tripoli or white jeweler’s rouge

Buffer

- Industrial shops have nets to catch flying pieces
- Set up  two separate buffers
    - For the first, load up the wheel with compound
    - The second has no compound
- Ideally hang the wheel over the edge of the bench so nothing is in the way of the wheel underneath.
- Hinge
    - Underside around roll of hinge
    - Hand sand crack in craevice
    - Bevel
    - Finish the top
    - Cleaqn off the paraffin compound is cleaned off Use a wet application of carnuB , wipe it off , then pu to on a second coat
    - Wax or clearcoat after
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- Brass Caster
    - Oil the caster
    - Hold sandpaper under  the caster and hold it against the wheel
        - The buffing wheel spins the caster against the sandpaper
        - 80, 200
        - Steel wool
        - Paper towel (rags will catch, paper will just tear)
- Steel casters
    - Break the edges:champfer the sharp edges
- Duplex Bars
    - Use duct tape and place the duplex bars in order on the tape
    - Hand-hold the duplex bar against the wheel to start
    - Clamp it in a vice grip to buff the top
- Nose Bolts
    - Usually nickel-plated brass nuts
    - Thread/screw the nose bolt onto the proper bolt to hold it against the wheel
    - Go in the direction of the thread so it doesn't spin off
    - Put a lot of compound on the corner of the wheel
- Hinge pins
    - Ed holds them with bare fingers
    - Set them down when they get hot
- Pedals
    - Remove the plating on a wire wheel
    - Ed uses bare hands to hold pedals because they don't get that hot
    - Clean the whole pedal off, then buff the pins
    - Maybe 75% of pedals are actually nickel-plated, not brass
    - Finish on the buffing wheel
- Brass Pedals
    - Often satin finish covered up the roughness of the crude workmanship
    - Wire wheels will pit brass, so don't use wire brush or steel wheels on brass
    - Buff brass
    - Aluminum oxide wheel will clean up scratches; the texture is like Scotchbrite
    - There is a tool that slides on a spindle with a 5lb Schrader on it, put on a sandpaper sleeve and pump it up
- Pedal Rods
    - Any nicks that are located at crucial friction points should be hand-sanded
    - Buff the ends first, far enough so you can get your hands on it; the ends are the friction points that contact the leather or felt
    - Use buffing compound, which is usually paraffin with an abrasive grit
    - Hold the rod diagonally across the wheel, not along the top or the bottom

- Steinway Continuous Lid Hinges
    - Difficult & time0-consuming
        - These are the most dangerous parts to buff
        - If it's a nickel Steinway and you're going to go brass, you can sand the nickel off down to the brass
        - The sections tend to catch on the buffer
    - Sequence
        - Buff the round part of the hinge first
        - With 9 or 10 screws, fasten the hinge to a board
        - Do one every fourth hole
        - Go a little bit more than ½ way, then rotate it
        - Reverse it and do the other side the same way
        - Work up to the corner/edge next to the round part of the hinge
        - Switch sides and do the same process
        - Now buff each length
        - On the cleaning wheel, do it in the middle to take the compound off
        - Open the hinge up and hand-sand the crevice
        - Sometimes the finish is so hard, start with a scraping chisel
        - In the old days without a wheel they used ammonia on steel wool by hand with no gloves
- Pedal Kick-Plate
    - It helps to hold the plate under the wheel
    - Start with the wire wheel, then move to the buffing wheel
    - Fancy plates with gaps and designs are difficult to get in the crevices
    - Use a dremmel tool
    - Use a plastic hand brush so as not to scratch
- Unusually shaped pedal springs
    - For difficult areas, use Carnu-B and steel wool by hand
    - Wire brush whatever the wheel can reach
    - Use a smaller wire brush with a hand-held drill
    - Insert a circular wire brush with an $1/8^{th}$ inch shank on a drill press
- Small hinges
    - Hand-sand with 220 grit
    - Buff
    - Usually you have three or four hinges that you can trade off as they get hot; by the time you have done the last one, the first one will be cooled off again to continue
- Music Board Kicker
    - Wire wheel everything first
    - Start with all the edges
    - Clean it up and then put some kind of clear coating on it

    - To loosen up bound parts, set it in muriatic acid for a few minutes, but make sure you neutralize it well afterward by rinsing it profusely
    - If the rivets come loose, you can mushroom down the rivet with a hammer on an anvil, but don’t over-do it
- Extremely rusty metal
    - Coarse steel wool
    - Sand paper
    - Acetone & keytone
    - Muriatic acid, then water
    - Wire wheel
    - Aluminum oxide buffing wheel
    - Sand-blasting
    - Scotch-Brite has all grades from coarse to fine
    - Order new parts