

Renewing Hammer-hinges

This short guide relates to the leather hammer-hinges that were universal on English square pianos from 1766 until about 1830, and continued on many instruments until the end of square pianos in England. They were also used by makers in many other countries, in Europe and America.

Many square pianos 'as found' still have their original hinges, and it is surely amazing that they have given service for 200 years or more. How many of the things we buy today will match this? However, the time comes when such parts fail, and once one goes, perhaps it is time to replace the whole set. This will also have the advantage that all the new hinges will be the same, which should make even regulation easier.

The first step in replacing hinges is to remove the mahogany slip that covers the hinges. This is retained by about half-a-dozen screws into the hammer-rail, on which the hammers are mounted. If you are very fortunate, or if there have been recent repairs, these screws will come out easily. More usually, they won't. Please ask for separate PDF Guide about 'Removing Stubborn Screws'.

Once this cover-piece is off, we might see original hinges, which almost invariably are numbered.



The annoying thing is, of course, that when the hammers are separated from the rail, the numbers stay where they are, but the hammers are left without identification. The reason for this is that the hammer-shafts were made (like keys) from a single wide, flat panel. The leather hinge and the cover-slip beneath were added as one piece, and then the individual hammers marked out, the hinge-leather numbered, and then the individual hammers separated. The numbers were put there for the man who made the piano, not for us! This is also the reason why we sometimes find a join within an individual hammer, when the panel was jointed up to achieve the width, and the marking-out could not avoid a join.

So if the hammers are still attached, or if their positions are known, number them underneath in pencil before you lose their positions. Before you rip off all the hammers, though, consider leaving alternate ones (or whatever is possible) in place. This will make it easier to re-align the hammers with their new hinges correctly. Then go back and do the others.

Almost invariably, the leather is glued into a shallow rebate in the underside of the hammer-shaft, and covered with either a tiny slip of mahogany or, for single-action pianos, a more chunky block. Either way, they were originally assembled with hot animal glue, which can easily be undone with heat and moisture. Before doing this, study the alignment of the two pieces carefully; you may wish to make a fine knife-mark where the square end of the cover slip comes to on the main shaft.

The best way to undo the glue is to fill a mug with boiling water, and dip the hinge-end of the hammer in it, taking very great care not to get the head anywhere near water or steam.



In the picture above from left to right we see two hammers (with old hinges), one in the mug, then one with the leather gone and the cover-slip separate, one with a new hinge and the cover not yet in place, and finally one clamped-up and setting.

If the water is hot, the glue will come undone in a few seconds. Clean and dry-off immediately, and keep the cover-slip with its hammer.

The leather for the hinge needs to be something like a fairly firm calf or goat skin, about 0.7 mm thick, and unglazed. I have achieved good results from an old wallet, after sanding off the glaze.



The leather in the picture is veg-tanned goat - this is also good for hammer-covers on eighteenth-century pianos. If the leather is too thick, it may be skived to thickness with a sharp scalpel; for narrow strips, this is not as difficult as it sounds.

The leather should be cut into strips of the correct width, and then a piece of the correct length glued into the rebate in the hammer-shaft. The original glue was hot hide glue ('Scotch Glue') and this is still the best. However, as this is a relatively unstressed job, which many of us tackle over several days, a ready-to-use glue such as Tite-Bond Liquid Hide Glue or Seccotine is perfectly acceptable. Under no circumstances should modern synthetic glues (such as the rest of the Tite-Bond range) ever be used. They cannot be undone satisfactorily (if at all) and will ruin the piano permanently for those who come after us. Or even for us, if we have to re-do the job...

Before re-fitting the hammers, clean off any old leather and glue from the rail. When re-fitting, be careful not to get any glue on the actual hinge line. And remember that fore-and-aft movement is not an option for adjustment. If the action is to work properly, the hammer-butt must fit snugly against the hammer-rail (there is often a leather facing on the back edge underneath) and the cover-rail must also fit snugly - but not so tightly that free movement is impeded. All of the hammers must have the same high degree of freedom, otherwise there will be no chance of adjusting the action properly. If the hammers do need to be re-aligned for-and-aft, there are other ways of doing it, but that's another story...

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