

# The Friends of the Pine Creek Grist Mill

## Restoration Progress Report 87 August 13, 2016

David Metz  
[davemetz@machlink.com](mailto:davemetz@machlink.com)  
563-263-4222



This month we had to deal with the hot Iowa summer at the mill. Some days it made working at the mill difficult. Besides the constant small problems the mill has every week we concentrated on two projects, completing the rope bed for the log cabin and putting the mill's water power turbine back into operation.

The rope bed I have to say (patting myself on the back) worked out better than I expected. It is a "take down" design made to come a part easily for transport, say in the back of a pioneers wagon. It is held together by mortise and tendon joints and the tension of the ropes.

This month we finished cutting and planing the boards, laminated the posts and side boards and drilled all of the rope holes. It took some careful cabinetry work to fabricate the mortise and tendon joints so they fit tightly.

After a trial assembly the crew stained the bed with a clear oak stain. Once dried it was time to string the rope. The Klauer brothers carried the bed parts up to the third floor, the only place we have room to store the assembled bed. To string the rope tightly the brothers used two custom tools, a reproduction of a rope winding device called a "bed key" and a tapered wedge for holding the rope tightly in a hole while tightening it. In case you're wondering it took almost exactly 90' of 1/2" manilla rope to string the bed.

I have a lead on the possible donation of a feather "tick" mattress for the bed. As soon as I have the time to go and look at it I will let the group know if it will work. If it does not we will have to sew our own mattress and stuff it with straw.

Our other big project has been to put the mill's turbine back into operation. Clarence Klauer asked one day why it did not turn and if it did turn wouldn't it be a good interpretive exhibit for the mill? I agreed, the turbine itself can no longer generate enough power to run any of the mill's machinery. It can spin and turn the large bevel gear on the top of its shaft. Along with the water churning in the turbine pit it makes an interesting show for the public.

It took little work to disengage the bevel gears so the turbine shaft could turn when the penstock gate is open. The problem is that the turbine would not turn at all when the water came on. To get it turning again would require the runner to be lifted out of the turbine case, the problem found, corrected and the turbine reassembled again. To my remembrance the turbine had not been disassembled since the late 1990's, the time had come for it to be serviced again.

Tom Hanifan often says he is amazed by how we always seem to have just the right people to help us when we need them. In this case Hank Mann had experience working on hydroelectric turbines, giant machines compared to our little turbine. Being a professional diver, he had no calms about jumping into the turbine pit to work on the machine. First we rigged our chain hoists to remove the turbine shaft and gear. Then a second hoist was rigged to lift the runner out of the turbine case.

What we found is that rust scale had built up on the edge of the runner that rubbed against the turbine's casing. The lubrication had failed in the turbine's top bearing causing drag. Once the old grease and dirt had been cleaned out and the rust removed (with an air powered rust chipper) the turbine started to spin freely again.

A safety cover to protect the public from the spinning bevel gear on the top of the turbine shaft is being fabricated by Dick Klauer. Once it is installed by opening the gate the public can see the turbine spin and water gush through the turbine pit.

For last month no work has been done at the log cabin. Work there is on hold until the floor is installed. Once that is done some of the furniture like the table, shelving and bed will be moved there. The remainder of the loft underside still needs to be stained. Other than that the interior of the cabin is complete.

Back at the mill we are contending with the usual problems. The inlet grate on the penstock gate became clogged with leaves preventing any water from flowing into the turbine. We may have to come up with a better easier way to clean it other than physically climbing down to the grating and raking it out.

We are taking time this month to do some additional cleaning. The parts of the mill we clean are not the obvious places. Mostly we are cleaning up rodent damage and trying to reduce the amount of junk in the mill. We are awaiting word from the DNR regarding funding for additional lighting for the first floor of the mill.

If you have any ideas for mill exhibits, projects or things for the cabin, please let the restoration crew know.

**Clarence Klauer is giving our new pioneer rope bed the final test**



**Below Dick and his brother Don Stoltenburg are gluing up one of the rope bed's side boards.**



**Clarence and Dick Klauer are stringing the rope bed on the 3<sup>rd</sup> floor.**



**Above Hank Mann is using a pipe wrench to attempt to free up the turbine runner. The gate is open allowing water to boil out from under the turbine.**



**Above Hank Mann and the crew have hoisted the runner out of the turbine. Clarence Klauer is standing on the penstock to the left.**