

Scientific Saw Hammering

3<sup>d</sup> installment

By R. W. Schoening

The writer has used many saw levels straight edges, and all manner of tension gauges both concave and convex. He has <sup>ve</sup> made for others as well as for <sup>myself</sup> himself many levels of different lengths, thicknesses and shapes, <sup>have</sup> made templates out of heavy saw plates which he made <sup>very</sup> as hard as glass, also, have had considerable experience with adjustable gauges, <sup>have also seen</sup> I also ~~saw~~ many different kinds of gauges used by filers in my travels. The saw level is certainly a fine tool when made right and given due care and attention. One cannot expect <sup>the</sup> fine edge of a level to keep itself straight or in shape without giving it the proper care.



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2  
The thin edge riding over the <sup>smooth</sup> hard surface of the saw blade wears much faster than most of us would ~~think~~ <sup>believe</sup>. A level can be made ever so hard and yet it will wear ~~crooked~~ <sup>out of true</sup>.

For this reason it is best to make levels and gauges that a good file will readily take hold of when one wishes to shape or line up his levels to conform with the proper contour of his hardened templates. Even the level grinding machines should be kept both clean and up to snuff to do proper work. I have made many levels out of band saw steel, but the best and most satisfactory levels, especially straight edges, I made out of the thin back of old used 2 man cross cut saws. The thinnest part of the cross cut saw makes an ideal ordinary straight edge 14" to 18" long. The cross cut saw tapers back <sup>when ground right</sup>.



~~Excess~~ is tapered ground and is about 4 gauges thinner on the back than it is at the point of teeth. As you cut your levels out of the back of a cross cut saw you will find that the <sup>back</sup> ~~outer~~ edge is much thinner than the freshly cut edge towards centre of the saw. It is this ~~outer~~ or back edge of the crosscut saw that makes the ideal straight edge especially if the saw has a good stiff spring temper in it.

It is best to select saw steel for straight edges <sup>that is</sup> of ground of uniform thickness. A straight edge should be absolutely flat, <sup>free from</sup> every hump and twist ~~to be made~~ <sup>no matter</sup> how small.

The idea is to <sup>make</sup> ~~get~~ the level flat on its flat side and straight on its edge. The larger or longer the level, the thicker <sup>it should be</sup> and shorter the level the thinner. <sup>it should be made</sup> Abnormally thick levels show too little and levels too thin show more lumps than



one ought to see and often deceive the eye. As an illustration a 12" straight edge <sup>should</sup> can be 16 gauge <sup>thick</sup> or 6" "

edge <sup>should</sup> can be about 20 ga. <sup>in thickness</sup> Reverse the process, make the 12" edge 20 ga and the 6" 16 ga

A 16" straight edge 15 ga, a 20" to 24" <sup>edge</sup> 14 ga, a 36" trueing up level for circular saws about 13 gauge. Back

<sup>log</sup> levels gauges for Band saws 5 feet and longer should not be thinner than 12 ga. Fine work requires well balanced tools, the saw level must be properly balanced to get the best results.

Some saw men like thick levels with 1/2" tapered edges as in end view of fig 1

This makes an ideal level on a rough job especially if the user happens to be careless. This beveled level must be ground true and be level on its flat side. One can use a 12 ga. ~~tool~~ piece of steel for a 14" or 16" straight <sup>edge</sup> and bevel grind it on both sides near <sup>the</sup> edge so that it will taper down to 16 or 17 ga on its extreme edge.


and get a level like this is a good tool where

you should use a level like this



the workman is rough and careless. The fine workman knows how to handle and care for his thin levels and ~~would~~ naturally prefers to have his levels as light and well balanced as possible. I have used adjustable gauges, but have found them too ~~plummy~~ <sup>plummy</sup> inaccurate and at times inaccurate.

A level is a poor tool if it deceives the eye and I pity the poor fellow <sup>who tries</sup> ~~who tries~~ to level steel plate with a <sup>handicapped by</sup> ~~handicapped by~~ a poor eye sight <sup>who tries</sup> ~~who tries~~ to level saw plates <sup>with a</sup> ~~with a~~ leveling gauge with a <sup>prick to keep it</sup> ~~prick to keep it~~ standing upon its edge.

Fig 2 shows a level used by an Aberdeen Wash. man. This <sup>the gauge or</sup> ~~the gauge or~~ level can be laid anywhere and is always ready for use in the one and same position. It is very easy made. A 3/16 piece of bolt iron or steel <sup>is</sup> ~~is~~ might better bent over an angle as in fig 3  threaded at the end to go through 3/16 hole bored in the middle of level near the top. Place a nut on the extreme end of the thread to act as a shoulder and insert same into level take another nut and tighten same.



This "proped up" level may make it  
 easier for a fellow to pick <sup>it</sup> up and  
 lay <sup>it</sup> down. It may be a good tool  
 after one gets used to it, and like most  
 things that come into our lives and  
 under our care, we can get used to most  
 anything. This "proped up" level is ab-  
 right too, for leveling long lumps in  
 saws but when one wishes to level cross  
 lumps and <sup>one</sup> gets near the teeth, the  
 prop is liable to catch in the throats  
 of the teeth. There are many back gauges  
 for band saws. The 3 point ~~back gauge~~  
<sup>segment</sup> adjustable back gauges seem to be the  
 most popular in the saw filing room  
 out west. A solid ~~level~~ back gauge  
 when true is of course the most  
 accurate level for short lumps and  
 hollows in the <sup>backs of band saws</sup> saw back. It is also  
 best for double cut saws. It is a  
 hard matter to keep the long solid  
 gauge in ship shape however, and  
 besides it is heavy and awkward to  
 handle. Therefore the 3 point <sup>adjustable</sup> gauge



that is to say it is) and for this reason  
~~above~~ I shall confine myself to straight  
edges and levels of all kinds.



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3<sup>d</sup> installment By R.H. Schenning  
^ Forword

In the previous installment of the <sup>present</sup> series of articles on scientific saw hammering the writer ~~dealt chiefly with hammers~~ <sup>gave first emphasis on the</sup> their proper ~~size~~ <sup>weight</sup> gave the fraternal his idea and kind of what he ~~thought~~ <sup>believes</sup> to be the right kind of saw hammers. In the present article he will make himself just as plain in regard to saw levels and straight edges. This tool, when made right ~~and~~ <sup>used</sup> ~~right~~ <sup>is</sup> ~~one~~ <sup>of</sup> the ~~best~~ <sup>best</sup> tools used on saws. It is the only tool <sup>the filer has that</sup> ~~that~~ <sup>helps</sup> ~~the~~ <sup>filer</sup> ~~to~~ <sup>locate</sup> a lump or ~~any~~ <sup>bad</sup> ~~place~~ <sup>on</sup> the saw. It is true that small lumps can be shaded so ~~the~~ <sup>the</sup> ~~eye~~ <sup>eye</sup> ~~will~~ <sup>will</sup> ~~see~~ <sup>see</sup> them as hand saw ~~smooth~~ <sup>smooth</sup> ~~hammer~~ <sup>hammer</sup> ~~in~~ <sup>in</sup> their hand saws. Also it is true that men have trained their finger tips to feel lumps in smooth iron or steel, as do the metal workers who smooth ~~up~~ <sup>up</sup> and finish up auto mobile bodies. This is quite a trick and requires much time and patience to master on the part of a metal worker. But saw straightening and tensioning is a little different from other metal work