The writer has used many saw levels, straight edges, and all manner of tension gauges both concave and convex. He has made for others as well as for himself many levels of different lengths, thicknesses and shapes, made templates out of heavy saw plates which he made as hard as glass; also have had considerable experience with adjustable gauges. I have also many different kinds of gauges used by fitters in my travels. The saw level is certainly a fine tool when made right and given due care and attention. One cannot expect the fine edge of a level to keep itself straight or in shape without giving it the proper care.
Scientific Saw Hammering
3rd installment
By P.H. Schoening

The writer has used many saw levels, straight edges, and all manner of tension gauges both concave and convex. He has made for others as well as for himself many levels of different lengths, thicknesses and shapes, made template out of heavy saw plates which he made so hard as glass, also have had considerable experience with adjustable gauges. I also many different kinds of gauges used by fitters in my travels. The saw level is certainly a fine tool when made right and given due care and attention. One cannot expect the fine edge of a level to keep itself straight or in shape without giving it the proper care.
The thin edge riding over the hard surface of the saw blade wears much faster than most of us would think. A level can be made even so hard and yet it will wear off of true. 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. When ground right the cross cut saw taper is back.
Taper is tapered ground and is about 4 gauges thinner on the back than it is at the front of teeth. As you cut your levels out of the back of a crosscut saw you will find that the 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 straightedges of ground of uniform thickness. A straight edge should be absolutely flat, every lump and twist too. No matter how small, make the level flat or its flat side and straight on its edge. The longer the level the thicker and shorter it should be or longer the level the thicker and shorter it should be made. Normally thick levels show too little and levels too thin show more bumps than
one ought to see and often deceive the eye. As an illustration a 12" straight edge should be 16 gauge. A 6" straight edge can be about 20 ga. on thickness. Reverse the process make the 12" edge 20 ga. and the 6" 14 ga. A 16" straight edge 15 ga.; a 20" to 24 straight edge 14 ga. A 36" tuming-up level for circular saws about 13 gauge. Back 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 A. This makes an ideal level on a rough job especially if the user happens to be careless. This level edge level must be ground true and be level on its flat side. One can use a 12 ga. level piece of steel for a 14" or 16" straight edge level grind it on both sides near edge so that it will taper down to 16 or 17 ga. on its extreme edge, and get a level like this is good tool when...
The workman is rough and careless. The fine workman knows how to handle and care for his thin levels and would naturally prefer to have his levels as light and well balanced as possible. I have used adjustable gauges, but have found them too clumsy inaccurate and at times inaccurate.

A level is a poor tool if it deceives the eye and I pity the poor fellow who tries to level steel plate with a handicapped by a poor eye sight. He tries to level saw plate without adjustable levering gauge with a hand took it.

Fig 2 shows a level used by an Engineer. This gauge or Aberdeen Hack, man. This 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 3/4 piece of bolt iron or steel might better bent on an angle as in fig 3. Threading at the end to go through 3/8 holdbore 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 "propped up" level may make it easier for a fellow to pick up and lay 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, he can get used to most anything. This "propped up" level is a right tool for leveling long lumps in saws but when one wishes to level cross lumps and gets near the teeth, the stock is liable to catch in the throats of the teeth. There are many backgages for band saws. The 3 point backgages adjustable backgages seem to be the most popular in the saw filling room out west. A solid level back gauge when true is of course the most accurate level for short lumps and hollows in the saw back. It is also a test for double cut saws. It is a hard matter to keep the long solid back gauge in ship shape however, and besides it is heavy and awkward to handle. Therefore the 3 point gauge
that is to say it is hand for this reason alone I shall confine myself to straight edges and levels of all kinds.
Scientific Saw Hammering
3rd installment By RH Sheening

Forward

In the previous installment of the series
of articles on scientific saw hammering
the writer dealt chiefly with hammers
gave the reasons why his idea of what he
hopes to be the right kind of saw hammer. In the present article
he will make himself just as plain
in regard to saw levels and straight
edges. The tool, when made right and
used right is one of the best tools used on saw. It is the only
tool that really helps the fitter to locate
a lump or any bad place on the saw.
It is true that small lumps can be
shaded so the eye will see them as hand
saw smiths hammer 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 and finish 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