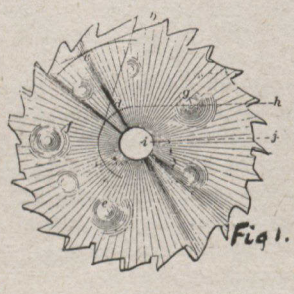
# Saw Mill Department

## REPAIR OF CIRCULAR SAWS.

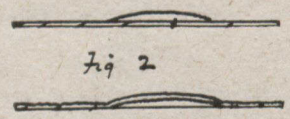
The most useful of all tools in the woodworking shop is the circular saw. Likewise, it is the most abused tool of all the woodworker has to do with. Did you ever see a saw like the one shown by Fig. 1? Yes, you have seen such a saw. Did you ever see one like it in your own shop?

Well, that is "a cat of another color," altogether. And you need not answer embarrassing questions, or those which



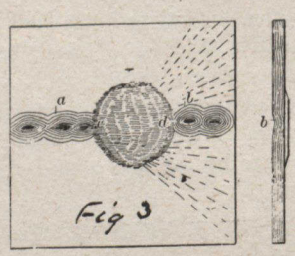

tend to incriminate yourself. That's good law, even if it has nothing to do with woodworking. The saw shown by Fig. 1 really does look a little bit off-color, doesn't it? Makes a fellow think of that picture of the horse which had depicted in it every ill the horse ever was subject to.

But this old saw, bad as it looks, is not incurable. It can be fixed up nearly as good as new. The only question about fixing it is, will it not cost more for time than it would



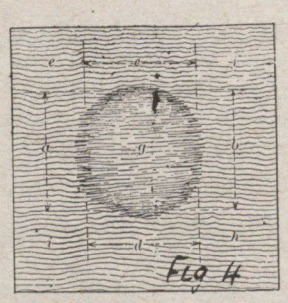

for a new saw? That question, however, depends entirely upon the diameter of the saw. If it were ten inches in diameter, the time would be worth the cost. Were the saw 48 inches in diameter it would pay well to put the saw in shape. It will require little if any more time to put the large saw in shape than it will to fix up the little ten-inch affair.

To begin with, what are the various troubles of the saw shown by Fig. 1? Well there are the teeth to begin with.




About the only perfect tooth appears to be at a and b, but it is comparatively easy to make new teeth for this saw. A case of severe jointing and the saw will be made round. Then the teeth may be spaced better and the spacing gradually improved by each and every filing or grinding. It does not pay to file saws, nowadays; files cost much more than emery wheels, and the use of a good emery grinder would soon cut these hideous and various teeth down to a semblance of uniformity, the flanks of the teeth being all laid out to the circle c, while the front of each tooth runs down tangent to circle d.

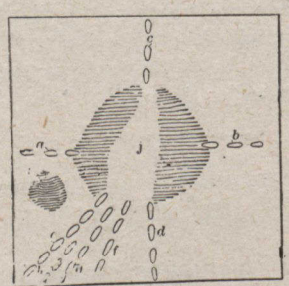
The next thing to be looked after is the condition of the saw-plate. Perhaps this will be looked after first, though it




is doubtful, for no sawyer would dare work over a saw having teeth like that shown by Fig. 1. Those teeth look mean enough to bite—they are worse than the teeth of a bull pug, and homelier, too. The first thing is to use a straight-edge, apply that tool at d h, to discover the condition of things at several burned spots, e, f, g, etc. With the straight-edge at i j, it is noted that the tool lies fair with the blade from eye of saw to the rim, and that there are no humps or hollows or other defects to be found.

Next, the straight-edge is transferred to d h. At the blue spot g it is noted that the saw-plate does not touch the straight-edge at all. The saw has been heated, along the line or circle of e, f, g, and the straight-edge reveals several hollow places as shown by Fig. 2. In the section through i j (Fig. 1) it is shown that the blue spot in the saw actually bulged out, much like the fire sheet of a steam boiler, the sheet of which had been over-heated and expanded under the pressure of the steam. Perhaps some dirt and dried grease had collected on one side of the saw. This cause has, more than once, been known to cause severe buckling of the saw.

The section through d h indicates that the steel actually stretched as shown. The view, however, is greatly exaggerated in order to show much more clearly in the engraving




the manner in which the saw has been expanded through section d h (Fig. 1). There is too much metal in the saw at g, Fig. 1, and in order to flatten down the swellings as shown by Fig. 2, it will be necessary to stretch the remainder of the saw, all around the swollen places.