

A SERMON IN A SAWMILL.

BY REV. D. R. MILLER.

WAA! Squire, I see yer runnin' of yer sawmill right along, Rippin' off yer slabs an' scannin' to the same old pleasin' song; An' the crick still keeps a rushin' on the noisy water-wheel, An' goes dancin' down the tail-race to a new Virginny reel. Yer a-pulin' up yer lumber, an' yer sawdust, too, I see, But the buzzin' of the sawmill is the ruin of the tree, An' I'm goin' to preach a sermon while yer greasin' up the cogs, For ter keep the saw a-runnin' thro' yer old sawlogs.

I have heerd yer say, frien' Will'am, that this cruel liquor trade Is a necessary business, an' it never can be stayed; But I'm here ter tell yer, Will'am, that no matter what yer think, 'The vile business cannot flourish 'ceptin' someone buys the drink, An' as sartin' as you've got ter have some logs to run yer mill, Jes' so sartin' must these liquor men have boys ter fill the till, An' we bring the human timber, an' they saw it up, yer see, Until by and by we're minus both the timber and the tree!

O, ther' is a sort o' hummin' which I know yer loves to hear, When the slabs are fallin' that way an' the lath's a-pilin' here, When the lumber's movin' out and an' the cash's a-comin' in, An' when everything's a-properin' an' times is good ag'in. Ah! but when the dives be hummin' an' the wheels of sin go round, 'There's a splendid lot of fellows that I know are being ground, You're a-slashin' down the forest, but they're slashin' down our joys, An' the rushin' of the business is the ruin of the boys.

O, that buzzin' saw o' ruin keeps a thrummin' right along, It's a-tearin' thro' the helpless an' it's tearin' thro' the strong, An' the sawdust that is fallin' is the tears an' blood an' woe, Droppin', droppin' in the waters that's a-surgin' down below. But the mill-wheels still keep thrummin' an' the slabs are flyin' free, An' the dust of blood has fallen till it's sprinkled you an' me, An' our boys are droppin' deathward like yer forests on the hills, But we still keep up the timber for the runnin' o' the mills.

You can saw yer logs, frien' Will'am, so that when the work is done 'They are worth far more in money than afore the work begun. But for every gash these liquor fellows make upon our boys, 'There's a blood-red gash o' ruin thro' our own domestic joys. An' we're all a-stan'in' back o' 'em, an' helpin' 'em along, An' a-savin' liquor lallots to perpetuate the wrong. For I tell yer it's the voter that manipulates the saw, When he regulates the business with his tax or license law.

Yes, the party wins by voters, an' the winners make the law, An' the law is the machinery that agitates the saw, An' this peerless Christian nation, with a heart as hard as steel, Takes the dealers' cash and turns the rushin' water on the wheel. 'Then all the mills go buzzin', and the tears begin ter flow, An' the homes begin ter crumble, an' the land is full of woe; But I tell yer all the sufferin' an' sorrow that we feel, Is because the Christian voter stands himself beside the wheel.

HOW TO BURN SAWDUST ON COMMON GRATES.

THERE are many sawmills that haul off their sawdust and haul back wood to steam their boilers with, thereby doubling the cost of their steam, when if they were to burn their sawdust for fuel they would save the expense of hauling it off and render the cost of their steam only that of putting the dust into their furnaces. Generally all this expense is incurred simply for the reason they have no sawdust grates. If these mills will daily put a small quantity of sand in their dust it will form a substance resembling pottery on their grates that will answer admirably for sawdust grates. This substance will be full of perforations, thus allowing the air to circulate through it, just as it does through grates, and when cold it is very brittle. Every morning it should be broken up, and a portion of it removed from the grates, leaving only enough on them to barely cover them over, and with heavy steaming it sometimes becomes so thick that it is necessary to remove a portion of it at noon. In burning sawdust mix no slabs or other large fuel with it. Burnt alone it is the best fuel that a pine lumber sawmill produces. To burn sawdust in small furnaces a blower in the smoke-stack is indispensable.

CORK FORESTS.

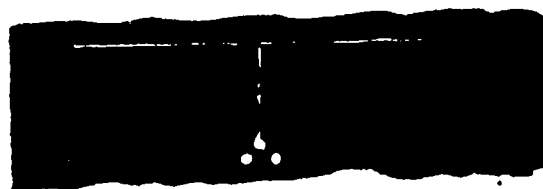
CORK-GROWING in Spain and Portugal is an extremely precarious business, and it demands considerable capital. Only the other day a man in New York City was seeking a partner with \$100,000 to put into a cork forest in Spain, with a lease of 150 years. The bark is cut only once in ten years, but as the forests are very large the grower manages to obtain an annual crop. Crude cork comes over to America in great bales weighing from 175 to 225 pounds each. The heat to which it is subjected in order to flatten out its curves also drives out most of the insects, such as one would naturally expect to find in bark. As cork is too light to form a cargo of itself, the cork-carrying vessels also bring oil, olives, wine and heavy merchandise of various sorts.

T. W. Kerr, Ladner's, B.C.: Well pleased with LUMBERMAN. A very valuable and useful paper. Eli page is good.

BAND SAW PRACTICE.

BY J. H. MINER.

WHEN a saw fractures in the centre there may be something wrong besides the filer's work. If a saw is adjusted so that the edges will not crack, and is run too open in the centre, it will, in the course of time, crack from unusual vibration. The centre of the saw forms a convex from over the wheels to an extent that will produce a greater bend in the centre than on the edges. The general result of a saw too open is a fractured edge. Saws that are not kept true will crack in the centre by the friction of such parts against the metal lining of the guide. In nearly all cases of fracture in the centre it will be found that the surface is hardened, and often so hardened that a file will hardly take it. A saw seldom cracks from the side. The crack is most prominent on the outside. Saws that are watched closely and have the surface dressed or ground off with a piece of soft emery, can prevent this. A test with the file will reveal whether such spots are removed. The dressing can be done while the saw is in motion on the mill. To arrest a crack filers differ. Some use a chisel and mark the saw parallel on both sides. Whether or not this is reliable I do not know. I have found out from experience that a crack punched as per the accompanying cut will not extend, and I think this is what is wanted:—



If the crack has extended no deeper than in the illustration, it will wear out. I have run cracks one and one-half for months. Great care must be taken to punch the saw well on both sides. The advantage of this equilateral triangle punching is that the divergence is not confined to one point, but to an angle which prevents the crack extending. Saws often crack in the braise. This is from two causes, viz.: A bad braise or distorted tension. There are many intricate parts about a well stuck braise that causes it to mysteriously crack. The greatest trouble with the saw fracturing in the centre is from bad hammering, and getting a saw full of lumps, which undergo an undue strain over the wheels, similar to the accumulation of gum spots on the wheels. A true saw rightly tensioned runs without tremor in itself. The mill may cause a vibration which it ought not to have, but it does not affect the saw as lumps do. It is not understood that a saw is cracked when it seems lumpy. Often a saw is found perfectly straight and flat as far as the full spots can be divided, but the straight edge shows many full places which the filer does not consider, simply for the reason that he does not believe this work will always better the case.

STEAM FOR THE SAWMILL.

STEAM in most sawmill plants, whether they be large or small, is an important question. On account of the nature of the fuel, which is, and always will be, green sawdust, its generation is of no small matter. The question first to be considered is sufficient boiler capacity, which in the average mill cutting lumber, lath and shingles, can be figured as follows: With two flue boilers, twenty-two square feet of heating surface for every thousand feet of lumber cut in a day of eleven hours. With tubular boilers it requires more, or thirty-four feet for the same amount of work. These figures are based on using the ordinary slide valve engines with steam feed edgers, trimmers, shingle mill, etc. The smokestack area should be one-third greater than the total combined flue area of all the boilers, and ninety to one hundred feet high. Any higher than that is useless, for it will not increase the draft to any perceptible extent. Where there is sufficient amount of sawdust when fed with conveyors to supply all the boilers the grates should be five feet long and placed twenty inches from the bottom of the boiler. It is immaterial whether they are set level or inclining. Ten inches back of the grates start the bridge wall, build it up to within ten inches of the boiler inclining at an angle of

forty-five degrees. Do not leave a large combustion chamber back of the bridge wall. You are not burning coal but sawdust, so fill it up to twelve inches or so from the bottom of the boiler. Have the return large and free, with doors to remove the ashes as they accumulate, for steam can never be made where the return space is filled with ashes to within a few inches of the boiler, as is often seen obstructing the free passage of air.

Feed the sawdust a little forward of the centre of the grates, for the draft has a tendency to draw it back. See that the fires are regulated properly with the feed slides in the conveyor, so that the proper amount is fed through, as it burns away on the grates below. Never allow the fires to get too high or too low. Drill peek holes one inch in diameter through the front, and by looking through you can look in, if the fire shows a nice bright color it is properly supplied and the heat will be intense almost to the point of melting the iron. But if darkish smoking or throwing many sparks, you can be sure the foreman has been negligent in feeding too slow or too fast, which will depress the steam as nothing else will. In the smaller mills, where slabs entirely are used for fuel, the grates should not be over three feet long, with the bridge wall built up two feet back of the grates. This will give a large fire room, the air passing up through the grates at the front thence back through the fuel, giving as quick a combustion for slabs as it is possible to make.

Never use eight foot grates, for it is an utter impossibility to keep them covered with fuel and you will never have steam with cold air passing through the grates. The most successful as well as economical way, barring first cost, for complete plants having sawmill, planing mill, kilns, etc., is to have one main boiler house placed near the sawmill. For there they must get their largest supply of fuel. There conduct the steam through pipes to the planing mill, etc., which can be very cheaply done by conveying the pipe overhead on posts placed twenty or twenty-five feet apart as follows: Drive two piles eight or ten inches apart, flatten the insides to fit the post, which is placed between them and two strong bolts passed through. Nail a cross piece on the post where you want the pipe and properly brace.

The box is made by spiking together two by twelve breaking joints. When the pipe is laid, and raised two inches from the bottom of the box, fill up and pack well around the pipe a mixture made of slacked lime and sawdust (made into a mortar as you would for plastering), which is a good non-conductor free from the danger of fire and at a very low cost. A pipe thus treated condenses but very little steam.

Blow the shavings through metallic pipe from the planing mill to the shaving vault in front of the boilers. By having the boilers arranged in batteries having one battery of just sufficient capacity to run the planing mill at such times as the sawmill may not be running, the expense for steam will be at the minimum.

Use a cyclone dust extractor set on the roof directly over the sawdust conveyor and spout down into it, and make a connecting branch to the main shaving pipe. At the connection have a valve or switch connected with ropes running down to the fire room. Then the shavings can be at will either run into the shaving vaults to be used for raising steam running kilns nights, etc., or switched off through cyclone and mixed with the sawdust feeding to the boilers, as the condition of steam requires. And it will astonish you how quick the boilers will respond with more steam when a little shavings are mixed with the sawdust feeding in.

Arched ovens such as are used in tanneries for burning spent tan bark built on in front of the boilers are cleaner with less danger of fire, and will give better results than the usual way of feeding with spouts between the boilers. As the brickwork soon gets red hot instantly igniting the sawdust as it strikes the grates, combustion is consequently more positive and complete.

BALES OF SAWDUST.

A CURIOUS and profitable business has grown up in the Maine woods about the sawmills in the utilizing of the immense quantities of sawdust by compression. Thousands of tons of sawdust are pressed into compact blocks and bales, and in this form is finding a ready market for kindling and fuel in eastern cities.