

United States Lumber Dens.

An extraordinary story was told by Mrs. Ellen Obenauer, at a meeting of ladies of the Central M. E. Chapel, Detroit, relating to the lumber dens of the north parts of the state. Mrs. Obenauer is a missionary employed in the pinneries.

"A fair example of what these places are," said Mrs. Obenauer "is the stockade den at Seney, in the Upper Peninsula. Seney itself is turned against all good influences. Before going I was counseled against speaking there for fear of bodily harm. The minister who had preceded me had been carried bodily from the hall. The town is the headquarters for four large lumber companies, and though there are but twenty-five houses in it thirteen of them are used as saloons.

The dive at the place is surrounded by a high board wall that reaches to the gable of the roof of the house enclosed. Why is the wall needed? Not to keep the lumbermen out, not to keep the women out, but to keep imprisoned the girls whose lives are by compulsion made a continual debauch. Great care is exercised in admitting strangers to the den and everyone unknown must be vouched for. One man gained admittance through the assistance of the groceryman who supplies the place. After leaving the bar room he heard a scream. He turned back and saw, lying prostrate on the floor, with the blood streaming from her mouth, a young woman who had been felled.

In the dance hall of the house he saw eighteen nude women dancing in a circle with the keeper in the centre brandishing a club. This is the state of things throughout the lumber country of Wisconsin and Michigan.

"What is the remedy? The governor of this State, when appealed to refused to meet the issue, dodging it on a technicality. The powers of the State, the officers of this commonwealth, either through fear or cupidity, dare not touch this terrible blot on the State."

Others spoke on the matter, and it was unanimously resolved to call a mass meeting at an early date. Evidences will be collected giving specific details, and Gov. Luce will again be called on to act.

Lumber Exports in Australia.

The San Francisco *Journal of Commerce* says:—"The lumber trade with Australia forms one of the greatest departments of our business with that country. Except for some of the fine timber of Western Australia, that great island continent may be said to be almost absolutely dependent on importations for that indispensable adjunct of modern civilized life—a good supply of lumber. We ship largely from this city, more largely still from Puget Sound and Humboldt Bay. Out of somewhere about one hundred and thirty millions feet of lumber exported from the Pacific coast of the United States in a year, Australia takes nearly one-half. The exact quantity taken runs from fifty to sixty millions feet annually, and is steadily increasing. Our business with Australia commenced away back in the fifties—in 1853, it forming the bulk of our exports for that year. Puget Sound began shipping to Australia largely as far back as 1856. In 1869 the exports to Australia increased very heavily. The record was even beaten in 1878. It has varied from year to year according to the demands of the colonies and must be much greater in the future than it has ever been in the past."

Prevention Of Boiler Scale.

The scale in boilers is formed from impurities of the water, and if pure water only is fed into the boiler, no scale is formed. This being settled beyond doubt, many methods have been proposed to purify the feed water in a rapid and cheap manner. To prevent scale by the use calcium hydrate and soda, F. Scheukel employs one or more tanks, according to the supply needed for the works, in which the water from the river is purified, and another tank for the purified feed-water. As purifying tanks he uses four iron boxes (or cylinders of old steam boilers), not over 5 feet high, which have an outlet cock about 6 inches above the bottom. They are heated by steam to 60° at least, and are preferable surrounded by some non-conducting material. Besides, they are furnished with a stirring arrangement, preferable a Koerting steam-jet stirrer. The pure water tank is placed on a level below the purifying tank, so that the purified water can flow directly into it from the purifying tanks, without the use of a pump. The water in the purifying tanks is heated as much as possible and the required quantity of thin milk of lime added and stirred; this quantity being either calculated after the analysis of water or ascertained by experiment. Only so much lime is to be added that red litmus paper dipped into the water, after 15 to 20 seconds begins to turn blue. Then the calculated quantity of pure (96 to 98 per cent) soda dissolved in hot water is added, stirred, and the water allowed to settle. In 20 to 30 minutes the precipitate formed is thrown down in large flakes and the perfectly clear water is drawn off into the feed water tank. With ammonium oxalate

it must not give any turbidity; and if another sample taken becomes turbid on the addition of calcium chloride, too much soda has been used. The advantages of this method of purifying the feed-water are: that the boiler requires no cleaning for a whole season; that the iron of the boiler-walls is not attacked; that the water does not froth and stop up the gauge-cocks, etc.; that the steam is free from acid; that steam is easier generated and thereby fuel is saved; that no breaking out of scale is required, its cost saved and the interruption of work caused thereby is avoided; that, finally, the method is comparatively inexpensive.

The purification of water by milk of lime and soda is known, but as regards the practical application, the above communication is valuable. The "Pharm Centralhalle," however, remarks that soda is not the cheapest purifier for all calcareous water, but for such as contain considerable proportions of calcium nitrate, besides gypsum, barium chloride would be cheaper to employ.—*Practical Mechanic*.

Don't Do these Things.

Don't open a cock or a valve under pressure, and let steam into cold pipes suddenly. If you do there will be a bill of repairs to pay, to say nothing of the liability of killing or maiming some one for life. A man was employed in a brewery cleaning barrels with steam from the boiler. He opened the globe valve suddenly and blew up the barrel losing one arm by his imprudence.

Don't suppose that a safety valve is going to think for itself, and don't fancy it is all right because it was tried last month, or last year, perhaps. Try the safety valve daily, and examine it, so as to be sure that the stem is not bent, or that the weight has not been shifted by accident or design.

Don't omit to keep the water gauge in good order, and be sure that the openings into the boiler, both steam and water, are not stopped up partially by scale or something lodged in them. Where the openings are of different sizes the water level will not show properly. Test the gauge by the gauge cocks, and be sure that it is right.

Don't suppose that the boiler is all right internally because it has never blown up yet. Get into it, and see whether it is or not. The man-hole plate ought to come off every week, and the engineer should satisfy himself by inspection that the braces are all right.

Don't forget that the blow cock is a thief which is very apt to run away with a great deal of coal unless it is tight. It should not leak a drop.

Don't be too liberal with oil or fat in the cylinder. Some men are constantly slushing the cylinder with grease, under the impression that it makes the engine run easier. After one or two revolutions all the grease that does not cover the rolls of the cylinder is carried out with the exhaust and scattered over the surrounding country. On a wooden roof this invites fire, and on a metal roof it soon causes leak by corrosion, for fatty acids are the most active of corrosive agents. Use eight feed cups in preference to any other agents; they not only save attendance, but they feed oil as it is needed—drop by drop.—*Milling Engineer*.

Solid Emery Wheels.

At a meeting of the Polytechnic Section of the American Institute, held Dec. 8th, L. Duvinage, in a paper of which this is an abstract, said that the increased quantity and quality of work that goes out of the modern machine shop was due to the skillful use of solid emery wheels. He said that a grain of sand from the common grindstone magnified, would look like a cobble stone, a fracture of which shows an obtuse angle, whereas a grain of corundum or emery would look like a rhomboid, always breaking with a square or concave fracture. No matter how much it is worn down in use it does not lose its sharpness; hence it is evident that the grindstone rubs or grinds and heat the work brought in contact with, while the corundum or emery-wheel with its sharp angular grit cuts like a file or circular saw.

There are two general classes of emery wheels in the market—one class of wheels has the grains of emery joined and consolidated by a pitchy material as rubber, linseed oil, shellac, etc. These must run at a high speed to burn out the cementing material by friction, loosening the worn out grains and thus revealing new cutting angles. These are non-porous wheels. Truing up this class of wheels is done with a diamond tool.

The other class consists of two kinds, one made by mixing the emery with a mineral cement and water into a paste, which will harden and bind the grains together; the other kind by mixing the emery with a mineral flux or clay, moulding into shape and burning in a muffle at a high temperature. These are porous wheels in which the grains of emery are held together by water having affinity therefore. This class of wheels, unlike the grindstone, has sharp grains of emery bedded to-

gether among matter which, in some cases, is as hard and sharp as the emery itself. Such wheels cut very greedily, and do not need to be run at any particular speed.

The dresser made of hardened steel picks, is the proper tool for toning up this class of wheels.

Manufacturers in metal goods aiming in reducing the cost of production, would do well to look into the adaptability of the solid emery wheels or rotary file and other labor-saving machinery before deciding on reducing wages of labor. A glance at the first page of this journal will show our readers where all kinds of emery wheels for the different classes of work can be purchased.

New Postal Arrangement.

By the new postal arrangement between the United States and Canada, which went into effect on March 1, 1888, articles will be allowed to go into either country, if admitted by the domestic law of either, except sealed packages (which are other than letters) and publications which violate the copyright laws of the country of destination, liquids, etc.

All articles exchanged under this arrangement are required to be fully prepaid with postage stamps, at the rate of postage applicable to similar articles in the domestic mails of the country of origin, and are required to be delivered free to addresses in the country of destination.

Articles other than letters, in their usual and ordinary form, on their arrival at the exchange post office of the country of destination, will be inspected by customs officers of that country, who will levy the proper customs duties upon any articles found to be dutiable under the laws of that country.

EXCHANGE ECHOES.

Chicago *Timberman*

The *Timberman* has hitherto striven to fairly present the views of the advocates and opponents of free trade in lumber by the removal of \$2 duty on Canadian manufactured pine. It is a foregone conclusion that the Mill's tariff bill will be modified, and now only serves the purpose of affording a subject for the evaporation of language laden wind. There is one point, however, that has been, to some extent, overlooked in the discussion of free lumber and that is that the removal of the import tax on Canadian lumber will not benefit the consumer over here in the least. The argument all along has been that the removal of this tax would give the Americans cheaper lumber. Does anyone for a moment suppose that this will be the case? On the contrary, the Canadian market will take its cue from prices prevalent over here, and the Canadian lumbermen will at once put up prices to correspond with the American market. They certainly would be fools if they did not, and the generality of them are not built that way. The serious attention of the advocates of free trade in Canadian lumber is invited to mentally discuss the above fact, and ask where the great benefit to the consumer is to come in. The *Timberman* has only seen one advantage in the free introduction of Canadian lumber to American markets, and that was confined to the economizing of our own forests. Outside of this foreign supply to prolong the diminution of our home stock, the removal of the restriction upon Canadian lumber, would not depreciate the price of lumber a mill a thousand.

Detroit *Free Press*.

The capital employed in sawed lumber in 1880, according to the census, was \$181,186,122. The wages paid amounted to \$31,845,974; and the cost of materials was \$146,155,385. The value of the product was \$233,268,729; and the profits of the lumbermen were \$55,267,370, or 30 per cent., and upwards on their capital. The duty is \$2 per thousand feet. The lumbermen, like all beneficiaries of the war tariff, stoutly deny that the duty is added to the price; and if this is so the removal of the duty would not effect the amount of the lumbermen's profits. It may be safely assumed, however, that the cost to the consumer is enhanced by some portion of the duty, though not, perhaps, by the full amount. It may, therefore, be assumed, also, that the cost to the consumer will be reduced by the removal of the duty, though not to the full extent of the duty. The American manufacturer will still have the cost of importation from foreign countries in his favor, and he will take the full benefit thereof. Suppose that the removal of the duty reduces the cost of lumber to the consumer \$1.50 a thousand. This on sawed lumber would be about equal to a little over 12 per cent. reduction on the value of the lumber product. On the figures for 1880 as already given it would mean a reduction of \$28,317,112 and a net profit in round figures of \$27,000,000, or somewhat more than 14 per cent. on the capital invested. What excuse is there in such a showing for any reduction in the present rates of labor, or any threat that such a reduction shall follow the removal of the duty on lumber?