BURNING SAWDUST.

Every once in a while we read two or three columns about "how to burn sawdust." Some people make an awful fuss about trying to burn sawdust, especially if it is green, or wet There is no trouble in burning sawdust under steam boilers, if all the conditions are favorable.

Some men say we must have a Jarvis furnace, in order to burn sawdust; some say we must have a blower, but that kind of talk is all nonsense. Sawdust needs a pretty fine grate. It cannot burn if it falls through the grate into the ash-pit. A chimney large enough to give good draught is absolutely necessary.

Sampson put in a tubular boiler, 5x16 feet and connected his uptake with a 11x17 chimney flue. The building was originally a dwelling house. No new chimney was built, but the partition was knocked out of the old one, making the two flues into one. Sampson tried to burn sawdust with the draft this old chimney gave him. He gave it up in less than a day and tried to burn coal. He gave that up also, and managed to keep up steam ten days with dry oak slabs worth $5 per cord Sampson put in a blower and forced the smoke up that miserable chimney. He burns slack and sawdust now. It keeps his fireman busy, and when the steam gets "started down," it is just all the poor fireman can do to keep that Corliss engine from "pumping." And when the steam gets down so low that a Corliss engine refuses to cut off, thereby taking steam during the whole stroke, then it is time for a reform. This engine will notdo good work when the steam pressure is less than 60 pounds—unless it is a low pressure concern. 60 pounds used to be the rule for the amount of steam carried by ordinary boilers for driving engines. It is different now. It has been found more economical to carry 70, 80, or even 90 pounds pressure per steam gauge.

To burn sawdust, we have a good large chimney, thus securing good, natural draught. When this is secured, and a good grate is provided, there is no reason why sawdust will not burn well and keep up steam also.

"How do you manage to burn so much sawdust?" we asked the engineer of a large saw mill. "We can burn it without any trouble," said he. "Getting it to the fire is our difficulty. It is quite a job to fire sawdust and do it well It burns through so quickly that half your grate is bare before you know it; this lets cold air get to the boilers, steam goes down and you growl because you can't burn sawdust."

Keep a thickness of sawdust on your grate according to the amount of draught your chimney gives. If it is not very strong a thin fire must be used, but if the chimney will almost draw up unburned sawdust, then we can carry a thicker bed of dust upon the grates, and burning sawdust will be much less work.

When a man says he can't burn sawdust, and you know that chimney and grate are sufficient, then just open the furnace doors and see the condition of the fire. Probably you will find 16 inches of green sawdust piled back of each door. You will find the back of the grate entirely bare, the corners full of dirt and rubbish, while a fringe of fire is struggling around the edges of these heaps of fuel.

The man who has no trouble with burning dust, always keeps a level fire. You never catch him with lumpy fires, or dirty corners, or see the cold air drawing through his grates to cool off the boilers. He never lets a layer of fuel get entirely burned out before he fires up again. Some chaps get into the habit of burning the charge almost to a tinder before again firing. They don't consider that ten hundred little streams of cold air are continually trying to get at the boiler through the grate bars. They let the fire burn down until there is hardly enough left to ignite the fresh dust, and then their steam goes down while they are waiting for the fire to come up.

The successful dust burner will fire up while he has a glowing bed of live dust. He never waits a minute too long. He is on deck with his big shovel at just the right time. He don't put in too much at one time to roll the smoke up chimney and over the neighboring country like a Naragansett fog.

We find that burning sawdust requires no special rig. A well proportioned furnace is all that is required for plant, but we must have a special man. Dust burning is an art, and depends almost entirely on the man who attempts it. Some men can never burn sawdust; they never burn coal or wood to advantage. Such men double the fuel and three times the help, and then can't turn out as much steam.

Did you ever know of a fireman who would run 8, 10, or even 12 boilers, and then always seem to have plenty of time to talk with every body who chanced to come along? Probably you have seen such a man. Perhaps he used to work for you, and you thought he was having such an easy time that you could squeeze down his pay a quarter, so you tried it, but fireman wouldn't be squeezed and jumped the job. You found it took two firemen and two coal heavers to do this fireman's work.

Such a man will have no trouble in burning sawdust, or any other fuel you may have. It all depends upon the "know how" of the man. Anybody can shovel coal or dust into a fire box, but that is not burning it to advantage, by any means.

He who would be a successful sawdust burner must keep his eyes open to every little point. There is no great principle underlying this art. It is just like many other branches of science where attention to detail, trusty experience, will secure good results even with the crudest of apparatus.

A Jarvis furnace is good for sawdust burning, but it is not necessary by any means — *James Hobart.*

THE CARE OF HARDWOODS.

A correspondent of the *Saw Mill Gazette* makes the following suggestions:—

It has occurred to me that a few suggestions with reference to the care of hardwoods might be timely, and perhaps well received.

Hardwoods are growing more and more into favor for interior decorations. First class residences, offices, etc., since the revival of Gothic features in architecture, are almost exclusively finished in hardwood, and choice oak, cherry, etc., clear and fine grained are in lively demand.

It is to be supposed that every man who is sawing these woods for future market desires the highest price for them; and yet, lumber is daily arriving in the market which is heavily discounted on account of its bad condition.

The acids of oak are strong, and when two pieces of plank are placed side upon side a souring, moulding, darkening process takes place, and this stain cannot be removed, and is even intensified by kiln drying.

It seems to be the custom of many to place wide boards or planks between layers for ratlines, one at the centre and one at each end of pile, and the result is that every plank is stained at the point of contact with these wide ratlines. A strip for this purpose should not over two inches wide and it would be better if no more than 1¼ inch.

Another reason for the rejection of or discount on hardwood is, that using for ratlines from the lot that is being piled necessitates a pile 12, 14 or 16 feet wide, and such a pile cannot be well ventilated. As a consequence much of the lumber in the centre of the pile is browned and streaked in hot weather by the gaseous vapor which has evaporated from the lumber during the day and settled back upon it at night. This gives the lumber a dozy appearance, and a hardwood finish should be bright and cheery. No pile should be more than eight feet wide, and width of six only would be much better.

Again, the top of a pile dries faster than the bottom, because the top gets more air, and besides much of the moisture arising from the earth is absorbed in the lumber nearest it thus retarding the drying. Prudence would suggest the setting of posts or short cuts of trees in the ground and timbers placed upon them in three lines for bearings from three to four feet above the ground. If the piles have a space of three feet between them and protection from the sun above them, that will be about the best arrangement for out door drying that can be devised.

The demand of the hour will be the demand for several years to come—yard-dry lumber of choice grades, and the lumber cannot be yard-dry, in the sense in which manufacturers understand it, unless it is as many years old as it is inches thick.

If hardwood lumber could be as easily kiln-dried as soft woods, then lumber of less age could be successfully used. But 1¼ and 2 inch oak or ash are kiln-dried at great risk of "honeycombing" if they are of less age than that I have mentioned, and kiln-drying is a necessity in the use of plank of any age.

MR. PHIPPS AT THE BOSTON CONVENTION.

The American Forestry Congress has been holding its sitting daily in Boston since Wednesday, and many valuable papers and addresses have marked the sittings. On Thursday Mr. R. W. Phipps, the Ontario commissioner on forestry, read an interesting report on his work, which he had been officially engaged in for the past two years. Having in view the advisability, indeed necessity, of caring for forests and and replanting, he had been engaged in spreading far and wide how these desirable things could be accomplished. From everyone willing he had obtained the results of experiments in forestry, and "although frequent suggestions in that direction have been thrown out, no scheme has yet met with such general favor as to warrant legislation in the way of granting exemption from local taxation to such owners of forests as shall agree to leave them uncleared. In the more wooded parts of the country it was found that taxes were so low on woodland that the remission would form no inducement. In those localities where it would, the county councils have not yet endorsed the plan. The Government of Ontario gives for all trees planted on roadside or farm boundaries, 25 cents each bonus after three years' growth, on condition that the township approve the act and pay one-half the bonus. Many thousand trees have been planted under this act. As yet we have not in Ontario placed trees to any amount in solid plantations of acres in extent. A very few experimental plots is all we can point to, and on such as these no bonus is yet given. I trust however, shortly to be able to report a change in both these points. Neither have we been able to agree on a plan for removing the June rubbish, which is so dangerous in creating and extending forest fires"

LUMBERING WASTE.

After referring to the great waste in cutting trees found afterwards too small for lumbering, and often left floating by thousands as logs in rivers, Mr. Phipps went on to say that 'the true way is to preserve the forest, but cut out and sell yearly the large trees. I should recommend where practicable, a 15-inch limit"

The passing of the "Fire Act" to prevent careless burning, was passed in Ontario some years ago. As it was not properly enforced, the Government last season on his report "issued a notification to lumbermen that on application being made, the Government would pay half the cost of any number of men the lumberman might think necessary to enforce the Fire Act near his limits. This movement is what was needed. These men whose business it is to warn, observe and inform, will prevent many fires and save much money, and also will enable to calculate that his forest will not be destroyed by fire. Therefore he will not cut half-grown trees lest they be burned, but will leave them to grow."

He had also received testimony that planted trees for breaking the force of the wind had always resulted in benefit to crops. The windbreaks are generally single rows of deciduous trees or evergreens. "Some complaints having been made that the telephone and telegraph men cut valuable trees to make room for their wires, I have inaugurated an arrangement with the companies by which they promise, wherever possible, to run wires only on the north and west of roads. If, then, farmers plant their shelter belts only on the north and west side of their farms (the side most needing shelter), they will always be on the opposite side from the wires. Perhaps this suggestion may be of service in the States."

RUST IN WHEAT AND FORESTRY.

"I should like to give my experience concerning rust on wheat, in connection with forests. It was 25 years ago, we were clearing a then thickly wooded district—the slope of a range of mountain in fact. We got then, surrounded by the forests as we were, very good crops with slight labor. Right under the lee of a great wood I knew a farmer get by summer fallowing 60 bushels to the acre of splendid fall wheat, the sort of wheat which, in this, our midge-stricken day, we never see. Occasionally we had rust; not much; the vitality in the soil seemed to carry the crops through all dangers. Still, farmers used to say: 'When we get more cleared, and let the air in, there will be little rust.' How prone we are to cut away the branch we are standing on; ay, and encourage one another, and hold agricultural meetings, sapiently pointing out to one another the most rapid way of breaking our necks! That whole slope is now almost denuded; the crest, which should have been preserved in wood, will soon be bare; the wash yearly of the upland is very injurious to the soil; and I hear this year that the rust is much worse than ever. I would say, therefore, let us not suppose, that by clearing away all the trees we will prevent rust. These examples proves we will not. The way to keep the land in condition for wheat is to preserve some forest near it, and the crops on that land will have a vitality (or else my experience goes for nothing) which will carry them successfully to ripeness."

Mr. Phipps finally referred to the advantage of having an official appointed in every State in the Union and province in Canada to attend to forest affairs, write and disseminate forestry literature, and advance in every way the cause of the forest. It will not be long till openings present themselves whereby in each locality such an official, if his heart be in the business, will discover ways of working for the general benefit

A MAN ATTACKED BY COYOTES.

Heretofore coyotes have been regarded as harmless, but the experience of Senator Walker last week contradicts this theory, and shows that when rendered desperate by hunger they will not hesitate to attack anything. The Senator left the Oreana Mine, of which he is Superintendent, late in the evening of Saturday last, intending to inspect the road leading to the coal pit of the company on Walmsley Gulch. The road from the mine to the gulch leads through dense patches of pine and tamarack trees interspersed with sage bush and grease-wood. It was while passing through one of these dense thickets that the Senator was suddenly surrounded by a pack of howling coyotes. Quickly dropping a loz of mutton he was taking to the coal pit, the Senator soon found himself perched in the topmost branches of a small nut pine tree which fortunately happened to be near at hand. Although as brave as a lion and in possession of a trusty Winchester rifle, the Senator's indignation was so great that he could hardly maintain himself in the tree, especially when he imagined he could hear the miserable brutes trying to climb up to him. Finally, however, his trusty rifle began to speak and dead coyotes soon covered the ground. After exhausting his shots the Senator was compelled to sit in the tree top and watch the pack fight and snarl over the bones of the slain until daylight, at which time he was happily rescued by a party of hunters from Virginia City —*Dayton (Nev.) Times.*

THE Monson Waterpower and Manufacturing Company is to be organized in Portland, Maine, October 5th. The company will improve the water power and mills at Monson, Maine. The business will consist of lumber manufacture, pulp making, and wood working. Timber land to the extent of 10,000 acres, additional to that already belonging to the plant, has, or will be, purchased. A large pulp mill will be erected, and also a wood-working factory.

An Important Arrest.

The arrest of a suspicious character upon his general appearance, movements or companionship, without waiting until he has robbed a traveler, fired a house, or murdered a fellow man, is an important function of a shrewd detective. Even more important is the arrest of a disease which, if not checked, will blight and destroy a human life The frequent cough, loss of appetite, general languor or debility, pallid skin, and bodily aches and pains, announce the approach of pulmonary consumption, which is promptly arrested and perman-