

THE SPEED OF SAWS

The speed at which circular saws are run in great saw mill establishments, says *The Age of Steel*, is one of the curiosities of the age. Even 6-foot saws are run 720 revolutions to the minute, which seems to be the maximum speed for successful sawing. Running at 720 revolutions to the minute, the teeth of a 6 foot saw are travelling nearly three miles a minute, a speed which is very hard to contemplate. Six foot saws have been driven at as high a rate of speed as 850 revolutions to the minute, and in Michigan a few years ago a Canadian Company with an immense capital geared up their mill to run their six foot saw 850 revolutions to the minute; but at such high rates of speed as these lumber has never been successfully made, for reasons that are obvious. John Orm's mill, at Paducah, Ky., which a 76 inch saw and steel feed, cut, on May 19th, 1877, 10,571 feet of 1 inch popular boards in 69½ minutes. This was looked upon as a great achievement by Mr. Orm, and the result was given on his letter heads, with a head of horns for parentheses, and sawyers were invited to beat the showing and take the horns. It is worthy of notice that in this trail the saw made no saw dust; each tooth tore out a strip of wood about one quarter of an inch thick, and many of these have been kept as souvenirs. But Michigan sawyers probably beat the world on fast sawing; wonderful stories come floating down from the lumber regions of that State about "a day's big work." Some time ago we heard of a mill dropping sixteen 1 inch 16 foot boards a minute, but this was probably an exaggeration. Locally some very good sawing has been done also by a new mill, but inasmuch as the possibilities of the mill have not been fully developed we refrain from alluding to the results.

The old-time sawyer is a character. His calling keeps him in the back woods, where he has few opportunities of noting the progress of the industries and the march of improvements, so that his head is filled with all sorts of obsolete notions. For instance, he will conclude that for good sawing a saw must have just so many teeth; and it is the observation of generations that the number of teeth required never exceeds the number in the sawyer's saw, though the latter article may have come down to him from his grandfather, in whose day saw teeth were fower and farther apart than nowadays. And this prejudice is not wholly limited to the old-time sawyers, for saw manufacturers here report that since Northern men have gone into the South in recent years they find it unprofitable to carry stocks in southern cities, as was formerly the practice. Without a saw is of exactly the right size and happens to have exactly the right number and kind of teeth, the buyer orders one from the factory. A prominent local firm which used to carry a stock of saws valued at \$10,000 at New Orleans has discontinued the practice, and now supplies its agency in that city and another agency in Chicago with only enough saws for samples.

The sawyer is naturally fond of boasting, and his saw is the pride of heart. When he has to have his saw "fixed" he must watch every operation to see that no harm comes to it. If he is an old time sawyer he will be very careful to tell you just exactly what he doesn't want done. And then after he has done all this he follows the saw into the factory and superintends the work of repairing it, commenting the while upon its great achievements. Even in Pike County, Missouri, and Pike County, Illinois, some of these old time sawyers are to be discovered. Not infrequently some of these have work done at local establishments, and it is amusing to hear them talk of "big sawing." Some time ago a Pike County sawyer, who had an old twisted, snaggle-toothed circular to be repaired, presented himself at a local saw works, and after explaining the object of his visit was blandly asked by the superintendent how much lumber he could saw in a day with that saw. "Well, I have sawed as high as 5,000 feet in a day," replied the sawyer, "which I know is a pretty big figure, for it beat all of em in my part of the country, but it's a fact, mister, as sure as I'm set'n here."

"You don't mean to say you have sawed 5,000 feet in a day with this saw?"

"Yes, sir, it's a gospel fact and I can prove it

by 20 witnesses. There's Hiram Brown, John Butterfield," (and then he gave the names of the rest of the witnesses.)

"Now, what would you say," finally remarked the superintendent, "if I were to tell you that there are saw mills that turn out more than twice as much lumber in an hour as you can turn out in a day?"

"Without you sent the mills yourself I'd say you didn't know what you was talking about."

Then the superintendent went out and returned with John Orm's printed statement of 10,571 feet sawed in 69½ minutes. This, the old fellow thought, was one of "them printed lies."

THE NEW TRACTION ENGINE

From the Ontario Farmer, August 28th

The New Traction Engine mentioned in a late issue, arrived in town early on Monday morning in a drenching rain which continued until three p. m. The roads were very muddy and many thought the New Traction could not come up town through the mud; but about half past three steam was let on and the little iron horse started for the town. Some loads of coal had been brought from the lake and met the engine on Simcoe Street. The horses were taken from the waggons and connection made to the engine by chains, until a load of eleven tons was made up of coal, waggons, and boys and men, and yet with only 40 lbs. of steam pressure, the load was taken to the gate of the Jos. Hall Machine Works. No difficulty was experienced in turning the corner at the Town Hall. The following day four holes were dug in the foundry yard 1½ feet deep, and the engine steamed into them and stopped, when steam was let on again, it passed out both forward and backward without any difficulty. This seemed a very severe test, but Mr. Galloway then directed that a hardwood scantling eight inches square be laid in front of the holes, and the engine again steamed into them and stopped, started again and passed over the scantling. Still not satisfied, Mr. Galloway directed that the engine be backed over the scantling in's and out of the holes. These very severe tests were gone through with twenty times or more, and were easily effected. The Governor Belt was then taken off and the engine driven at the rate of seven miles an hour. Two New Model Threshers and a Dungee Horse Power were then chained together and hauled behind the engine and tender, and started for the G. T. R. Station. On its way it turned three right angles and steamed its load up under the crane at the station, uncoupled, turned around and returned to the Hall Works as readily as a team of horses. Yesterday loads of coal, pig iron, a thresher, and an ordinary portable engine were coupled together, making 21 tons 700 lbs. Thirty boys climbed into the waggons, making a load of 23 tons, not counting the engine. Steam was let on and in a moment the train was in motion. Mr. Galloway assures us that he could readily have drawn 30 tons to the station had the coal and water tender been strong enough to have chained the load to, so that a constant supply of water could have been pumped into the boiler, and that with less than one fourth of a ton of coal he could have hauled it to the lake, with only a ten horse power engine. Mr. Galloway, the mechanical superintendent of the Hall Works, deserves great credit for the manner in which he conducted all the various experiments. Although he had not handled a Traction Engine for nearly fifteen years, he brought it up from the station, through the mud, drawing eleven tons, without an accident of any kind. He showed perfect control of the engine and good judgement in testing its capacity. While familiar with the developments in Traction Engines in Great Britain and the United States, he assures us that this engine is infinitely in advance of any he has ever seen or heard of. From our standpoint this engine marks an important era in the use of steam power, hardly second to the Railway Engine. It has more than fulfilled the claims we set forth in a late issue. The proprietors of the Jos. Hall Machine Works have the exclusive control of the patent for Canada for fifteen years.

We learn that a second engine has been purchased of Messrs. Wood, Taber & Morre, and is on the way here for the exhibition at London

and other places, and the one here will be shown at Toronto.

THIS FULLY WONDERFUL MOTIVE POWER GIVES TO THE HALL WORKS THE VERY FIRST POSITION IN THE DOMINION AS BUILDERS OF AGRICULTURAL MACHINERY. The New Model Thresher, the Hall Thresher, the Collins Patent Clover Thresher, the Pitt's Planet, California, and Dungee Horse Powers (mounted and down), the Oshawa Engine, the Rubicon, Traction Engine, Walrath's Patent Straw burning Engine, with and without traction attachment, Reapers, Mowers, Seeders, Grain Drills, Coal and Water Tenders, &c., all of the very best models, make a list that no other establishment in the Dominion of Canada, or even in the United States, can offer to the farmers. To Oshawa it means more than we have space in this issue to foretell.

Just as we are going to press the little steam horse has started with its coal and water tender and a New Model Thresher, for the top of the high hill north of Whitby town.

AGAIN IN OPERATION.

The Flint & Holton saw mill resumed operations yesterday morning. It will be remembered that their mill and planing factory were consumed by fire last February. As soon as the weather would permit, the work of reconstruction began and has resulted in the saw mill being erected on the old site, which will have increased power and capacity over the mill consumed. The boilers, which did service before the fire, were found in good condition and are still doing service. A fine 120 horse power engine, from the Hamilton Manufacturing Co., Peterborough, furnishes the power. The stone walls and the boiler are all there to remind one of the old mill; all the other furnishings are new throughout. Owing to the lateness of the season, it is not probable that the planing mill will rebuild until next season. This mill, instead of occupying a wing, as before the fire, will be in the part of the building formerly occupied by the elevator. The heavy losses sustained by this well known firm, and the phoenix like manner in which they survived these difficulties, commend them to the patronage they so long and deservedly received before the fire.—*Belleville Intelligencer*.

DARKENING OAK

A correspondent in the *English Machine* gives the following process of treatment for darkening oak which he considers the best, after trying the various other processes used by the cabinet makers and builders to darken woods.

"Oak is fumigated by liquid ammonia, strength 850 degrees, which may be bought at any whole sale chemist's at 5s a gallon. The wood should be placed in a dark and air tight room, in a big packing case, if you like, and half a pint or so of ammonia poured into a soup plate and placed upon the ground in the centre of the department. This done shut the entrance, and secure cracks, if any, by pasted slips of paper. Remember that the ammonia does not touch the oak, but the gas that comes from it acts in a wondrous manner upon the tannic acid in the wood, and browns it so deeply that a shaving or two may actually be taken off without removing the color. The depth of shade will entirely depend upon the quantity of ammonia used and the time the wood is exposed. Try an odd bit first experimentally, and then use your own judgment."

ARTIFICIAL WEATHERING OF WOOD.

In an article on the preparation of wood for car finish, the *National Car Builder* mentions a Japanese method of treating wood for back grounds of ornamental work, which it regards as well worthy of attention. It consists, it says, in removing the softer portions of the fibre so as to leave the remaining grain in high relief—a sort of artificial weathering by which the softer portions are worn away. The method has not been very clearly described, but it appears from the information given that materials like Dutch rushes are employed to scour or grind away the surface. The boards are sometimes quarter-sawn, but more frequently they seem to have been taken nearly through the heart and at a

small angle with it. This gives long sweeping curves to the grain. After the required relief has been attained the wood is filled. The final coats seem to be a hard wax finish without a polish. For panels the effect is superb. As a background for metal work in relief, or for carving, it would be difficult to find anything richer. To produce such work does not appear very difficult. Although the cost of such panels in Japan is very great, they need not be expensive here. The hand labor necessary for wearing down the wood may be easily replaced by machinery. The desired effect would then be obtained quickly as well as easily. Probably the same results can be obtained by the use of the sand blast or with steel brushes. The first car builder who introduces this style of ornamentation will have something not only unique but beautiful. In many respects it would be more attractive than the stamped leather and the Lincrusta, now so fashionable. As patterns for stamped leather, these wood designs would be very desirable, and if we cannot have the original, it might be possible to get an imitation by the electrotype process which would answer every purpose.

THE CANADIAN PACIFIC RAILWAY.

Rails have been laid on the western end to a point sixty miles west of the Columbia river. On the eastern end of the track is laid within forty miles of the Columbia (second crossing). The gap has, therefore, been reduced to 11 miles, and in that gap a great part of the roadbed is ready for the rails. All the grading up to within eighteen miles of the Columbia on this side will be finished by the middle of September and the rails on this end will be laid. It is said that there are not rails enough at Port Moody to complete the track to the Columbia, and that rails will be brought over the road from the east. Track is laid at the rate of about one mile per day at each end, and it is not expected there will be any serious interruption. The last spike will be driven about the end of October. Upon that occasion it is expected a large number of notables will come over from the east, although it is not likely there will be any public excursion. After the track has been joined there will remain a great deal of work before the road will be fairly ready for traffic, and it will probably not be really opened until some time next spring. In the meantime the extension and branch at this end, and the necessary terminal buildings and wharves, will be going on so as to be ready for through traffic. By that time it is expected that arrangements will have been completed for putting train ships on the various routes on the Pacific ocean.—*British Columbian*.

A DISPATCH from Ottawa on Sept 10th says. From present indications it is evident that in lumbering operations on the upper Ottawa this season the cut of square timber will be small, while there will be a great increase in logs. The square timber market in Quebec has been dull this year, so that lumbermen feel that a curtailment in the manufacture of square timber is a very great necessity. In sawn lumber there has been a very good demand at fair prices, so that the log trade has got an impetus.

TAR may be removed from the hands by rubbing with the outside of fresh orange or lemon peel and drying immediately. The volatile oils dissolve the tar so that it can be rubbed off.

Secret, involuntarily drains upon the system cured in thirty days. Pamphlet giving particulars, three letter stamps. Address, World's Dispensary Medical Association, Buffalo, N. Y.

Advice to Mothers.

Are you disturbed at night and broken of your rest by a sick child suffering and crying with pain and cutting teeth? If so, send at once and get a bottle of Mrs. Winslow's Soothing Syrup for children teething. Its value is incalculable. It will relieve the poor little sufferer immediately. Depend upon it, mothers, there is no mistake about it. It cures dysentery and diarrhoea, regulates the stomach and bowels, cures wind, colic, softens the gums, reduces inflammation and gives tone and energy to the whole system. Mrs. Winslow's Soothing Syrup for children teething is pleasant to the taste, and is the prescription of one of the oldest and best female nurses and physicians in the United States, and is for sale by all druggists throughout the world. Price 25 cents a bottle.