

CULTIVATING BLACK WALNUT.

The growing scarcity and increasing demand for black walnut lumber has frequently been referred to in the *LUMBERMAN*, as also the profits which would likely accrue from its cultivation. The Portland, Ore., *Journal of Commerce* has the following remarks on the subject:

In view of the incessant demand for black walnut lumber and its growing scarcity, it is surprising that there is so little attention paid to the cultivation of the timber, especially when the labor to be expended is so small and the returns so munificent. There are very few farmers in the country who cannot spare a few acres of land to be devoted to the cultivation of this valuable wood, which is always in active demand, and there is no crop to which they can turn their attention that is so prolific, and so certain of munificent returns on the investment of labor, as that is about all that is requisite to be expended; and there are few localities in the country where the soil and climate may not be found adapted to the cultivation of this valuable timber.

It is an undisputed fact that there are hundreds of farms in the United States and Canada in which, in the land clearing process, sufficient black walnut timber has been converted into rails for fencing, and cremated in log heaps "to get rid of it," which if it had been permitted to stand, would to-day be sufficiently valuable to purchase several farms with all the improvements and stock; and scattered trees which were fortunately spared from the wreck and destruction, have been sold for from \$100 to \$400 each on the stump. With these facts before the farmers of the country, it seems almost incredible that so few of them avail themselves of so apparent an advantage. True it is a crop that requires several years of waiting for returns, but any farmer, who when starting in as agriculturist, will plant an acre of ground to black walnut, and continue to plant one acre yearly, in the ordinary course of nature will live to reap yearly returns far in excess of all the roots and cereals he can raise by laborious and toilsome application to his usual avocation as a tiller of the soil; and providing he should fail to reap the reward himself, he has made provision for his family that is as safe as government bonds, and more profitable than life insurance, as the planting of a black walnut means the harvesting of a tree in 20 years, the minimum value of which shall be \$20, and an increase in value thereafter of at least \$2 a year if permitted to stand, and a final value of from \$100 to \$300 a tree when they reach full maturity.

An experimental black walnut grove now nearing fruition in Michigan is rapidly developing, and from which the owner, in a very few years, will reap the harvest of the most profitable crop ever planted in the State, and the owner's greatest regret is that he did not enter more extensively into the business. He says if he had planted half his farm with black walnuts, the standing timber in 25 years would have been worth three times the balance, with all his stock, buildings and other improvements. The certainty of returns is the great feature of the business. Black walnut is in demand from one end of the country to the other, and its scarcity is becoming more apparent from year to year, dealers finding it more difficult to obtain. It is one of the most valuable timbers capable of production, besides being hardy and thrifty; hence the farmer who devotes a small portion of his time and opportunity to meet the unfailing demand, makes an investment for the future which will certainly meet his most sanguine expectations.

HOW TO REPAIR A CRACKED CIRCULAR SAW.

A correspondent of a London exchange says, cracks in circular saws may arise from a variety of causes such as too hard a temper, striking a nail, saw binding, improper shape of tooth for the wood, &c. Teeth with angular gullets are more liable to crack at the roots than those with rounded gullets, more especially if the gullets are not sufficiently large and deep to allow of a ready escape for the sawdust. If the crack is only a short one—say two or three inches in large saws—it may usually be stopped from extending by drilling a small hole at the extremity of the crack. To do this a drill of the hardest possible temper will be required, and for making this we have found Mushat's

special steel suitable. The drill must be run very slowly and be well lubricated. The hole should be slightly counter-sunk on either side. For saws up to 3 ft. diameter a hole of about $\frac{1}{4}$ in. diameter will generally be suitable; for saws above 3 ft. diameter, about a $\frac{1}{2}$ hole.

If the saw is of large diameter, and the crack extends too far into the blade to permit of its being safely run with only a stop-hole drilled as above described, saw-makers drill out the plate, and fit in one or more yokes according to the length of the crack. The best method of doing this with which we are acquainted is as follows.—First of all the stop-hole is drilled at the end of the crack and carefully plugged, and afterwards the saw is bored to enable a small yoke or clip to be fitted in. This yoke is flat, and of the same thickness as the saw. Its ends are rounded, and its middle is narrower than the ends are, that the saw may be firmly held. The diameter of the ends should be about $\frac{1}{2}$ of an inch wider than the middle of the yoke, which centre is parallel and straight. The holes at either end of the yoke and the intermediate metal are drilled out and cut away. The saw-plate must now be carefully counter-sunk on both sides, and a piece of steel accurately fitted into the opening and rivetted into its place. The yoke should now be ground down until it is of exactly same gauge as the rest of the saw and perfectly smooth, so that when the saw is set to work there should not be undue friction at this point. If the saw is a very large one and the fracture extensive, two yokes will probably be required. It will not pay to repair small saws in this manner.

Thread and Needle Trees.

On the plains of New Mexico are forests of a growth known as thread and needle trees. The tree partakes of the nature of the gigantic asparagus, and has large, thick, fleshy leaves, resembling one of the cactus family, known as the "Prickly pear." The "needles" of the needle and thread tree are set along the edges of these thick leaves. In order to get equipped for sewing, it is only necessary to push the thorn or needle gently backward into its fleshy sheath, this to loosen it from the tough outside covering of the leaf, and then pull it from the socket. A hundred fine fibres adhere to the thorn-like spider webs. By twisting the needle during the drawing operation this fibre can be drawn out to an almost indefinite length. The action of the atmosphere toughens these minute threads amazingly, to such a degree as to make a thread twisted from it no larger than a common No. 40, capable of sustaining a weight of five pounds, about three times the tensile strength of common six-cord thread. The scientific name of this forest wonder is *Tenryana mucadica*.

LARGE MACHINERY SHIPMENTS.

On the 30th ult. the Waterous Engine Works Co., of Brantford, Ont., shipped to the Brunette Saw Mill Co., New Westminster, B. C., one of the largest saw mill carriages that has ever been built in the province. It consisted of six girder steel log seats, extending 76 feet from centre of first to centre of last block. Each block was formed of two 10 in. steel girders, with a heavy steel plate rivetted on top of each girder, surmounted by a very heavy knee piece, which was set forward by three inch screws made of steel. Under each log seat were two 3 in. steel axles with heavy steel V wheels on the front and flat wheels with a flange on the back. These ran on a heavy steel track. This immense carriage was built to take in logs of 7 feet diameter, 80 feet long, weighing 80 to 100 tons each. The carriage itself without any woodwork weighed over 12 tons. The setting and receding device on this carriage is a new departure. They shipped on the same car a King edger made to take in lumber 50 in. wide using six saws. This edger with its appurtenances, weighed in the vicinity of five tons. Such heavy machinery as this cutting lumber is unknown to the Ontario trade, but is the only class that will stand the immense timber of the Pacific Coast. We understand that the same firm has received an order from the Northern Pacific Lumber Co., for the engines, boilers

and burner required in their mill at Port Moody. They are also building a large boiler for the Globe Printing Co., Toronto, 16 feet long 66 in. in diameter, with but one sheet only on the bottom of the boiler, and two smaller boilers for the British American Starch Co., of Brantford. They have more recently shipped a 50 horse power saw mill with gang edger, planer and shingle machine to John Lineham, Calgary, and another similar outfit over the Northern Pacific to Kootenay, Idaho, and thence by teams to the mining district of Nelson City, B.C., and two sets of saw mill machinery with gang edger, slab saw and shingle machine to St. Johns, N. F., which will sail by the steamer "Cacouna," leaving Montreal on the 14th.

WHAT CRACKS SAWS.

A writer in the *Tradesman* gives his ideas on a subject which is a matter of interest to all who are engaged in sawing wood.

"Unequal expansion," he says, "is a cause for saws cracking, especially when the crack is at the bottom of the tooth. There is always more strain upon the periphery of the saw when running than there is at the centre, no matter how carefully it is hammered, and that strain is always parallel to its face. When a cold saw is first put in motion with the centrifugal strain that is already brought to bear upon the periphery, if by any reason that part becomes heated before the heat is communicated to the whole plate, that part becomes suddenly expanded, and with this and centrifugal force together, it must either stretch or break, and if the steel is of an inferior quality and deficient in strength the latter result will follow.

"While bad filing and not sufficient set frequently produce this effect, yet the number of teeth and the size of the gullet in proportion to the feed has much to do with it. The action of the saw tooth upon the wood is much the same as a chisel in the hands of a workman in the act of paring across the grain of a stick of timber, and the nearer the shape of the tooth approaches the shape of the chisel the cleaner and easier the cut. The sawdust should have the appearance of fine chips instead of dust, as will be the case where the teeth are so blunt that the wood is scraped off rather than cut. For instance, a saw with 40 teeth working on a $2\frac{1}{2}$ -inch feed, each tooth would only be required to cut a chip $\frac{1}{16}$ th of an inch deep, and with a chisel of the width of a saw tooth in the hands of a workman would be considered a light chip, and if the gullets are sufficiently large to contain that amount of sawdust which accumulates while passing through the log without packing so tight as to cause friction upon the sides, then the saw will run without heating. But, on the contrary, if there is not sufficient room to carry the sawdust so that it is compressed in the gullet or a part of it escapes between the plate and the log, the friction will cause the saw to heat. It is quite unnecessary to point out to an experienced sawyer the effects of trying to run a hot saw. In such cases either the feed must be cut down or a saw with a less number of teeth and larger gullets should be substituted.

"I apprehend this is one reason why saws with inserted teeth have come into favor with a certain class of sawyers, not that they are any better than one with solid teeth, but because as a rule they are further apart and have more space for the sawdust, and besides, the teeth are easier to keep in the original shape. If a saw with solid teeth, having the same number and the same clearance were used and the teeth kept in their original shape, there is no doubt but that a much thinner saw could be successfully used."

James McDonald, aged 17 years, was drowned while engaged in river driving on the Salmon River, Ont., for the Rathbun Company. The accident occurred at Newton's Mills, Crow Lake. His home is in the township of Sheffield near Tamworth.

Peter McLean, a lumberman, was drowned some weeks ago while crossing on the ice to Little Current, Ont.

The saw mill owned by Mr. Wm. Coon, near Rush Point, Ont., was destroyed by fire May 7th., together with a quantity of logs and maple lumber. Loss considerable; no insurance.