AUSTRALIA.

Messrs. Lord & Anches' monthly circular, dated Melbourne, June 12th says:—

Our last circular was under date 15th May, since which the trade has been steady, with no appreciable change in prices of any description of timber. The arrivals of Baltic, flooring and Oregon have been heavy, as also have been slates, which are in a very depressed state.

Trade from the yards show a slight falling off.

Red Deals.—Imports. 7,761 pieces. These arrived per the Dingadee, from Sydney, as I were sold privately. Price not transpired. The Elizabeth's cargo was sold on the 8th inst., D O M brand realizing for 11x4, 9x4, and 11x3, 6d to 6¾d; 9x3, 6¼d to 4¾d; 9x2½, 5 1 16d to 4¾d; 7x2½, 4¾d to 4¼d all per foot of 9x3. Good quality Joiners' deals are in demand, but inferior fourths are difficult to quit.

Spruce Deals.—Imports: Nil. The Howard's shipment was sold on 25th ult., 11x3 realizing 4 1-16d, and 9x3, 2¾d to 2¾d.

Oregon Timber.—Imports: 2,626,320 feet super. The arrivals have been Emerald, from Puget Sound; Thomas R. Foster from Burrard Inlet; Nicoya and Hesper from Port Townsend. The Thomas R. Foster's cargo has been sold privately; price withheld. The Fresno's cargo was sold on 4th inst., at from £5 7s 6d to £4 10s—average £4 18s 6d per 1,000 feet super, which is an advance on last sales.

Lumber.—Imports: Clear pine, 24,635 feet super; shelving, 41,123 feet super. The only arrival during the month has been the Samar, from New York. Sales of sundry shipments were at prices ranging for clear pine, £13 17s 6d to £13 10s; shelving, £10 5s to £10 per 1,000 feet super.

Flooring and Weatherboards.—Imports: 5,944,652 feet lineal. The arrivals have been—Mentone and Apollo, from Fredericstad; Northern Monarch, from Montrose, Don and Falkland Hill, from Glasgow. Sales have been made of shipments ex Howard, Inchgreen, Aurora, Coler, Palawan, Loreley, Fritzoe, Falkland Hill, &c, at the following rates:—Baltic Red, 6x1½, 9s 6d to 8s 9d; 6x½, 7s 7d to 7s 3d; 6x¾, 6s 9d to 6s 6d; 6x½, 4s 10d to 4s 7d, 1 out 5s to 4s 10d. Baltic white, 6x1¼, 9s 9d to 9s 3d; 6x¾, 7s 6d to 7s; 6x½, 6s 3d; 6x½, 5s to 4s 8d; 4-out, 5s: last month's rates being fairly maintained.

Kauri Pine.—Imports: 281,918 feet super. The arrivals have been Peerless, from Wangaroa, and Clansman, from Mercury Bay. The balance of the Parnell's cargo was sold on the 8th inst., at a reduction on lastt quotations. The Peerless cargo is advertised for sale on Tuesday next.

Pitch Pine.—Imports. Nil. The shipment ex Sarah Hignett was sold on 21st ult, wide clear shelving realizing £10 12s 6d, 10 inch T. and G., 6s 6d per 100 feet lineal.

Cedar.—Imports: 214,700 feet super. The arrivals have been the Thyra, from New Guinea, and per coasting steamers from Sydney. The Thyra's cargo was sold on the 8th inst., at 28s to 14s 3d per 100 feet super, prices satisfactory considering the quality.

Doors.—Imports: 1,209. This parcel arrived ex Sydney steamers, and came to the order of the trade.

Laths and Pickets.—Imports: Laths, 7,943 bundles. The arrivals are Emerald, Thomas R. Foster, Nicoya, and Hesper, from Oregon ports; Northern Monarch, from Montrose.

Slates.—Imports. 572,457. These arrived ex Wellington, from Tasmania; Samar, from New York; British Ambassador and Glenricht, from Liverpool. A small invoice of 20x10 American blue Bangor, ex Sarah Hignett, was sold on 21st ult at £7 per 1,000. Stocks heavy.

Plaster. Imports. 500 barrels. This shipment arrived ex Samar, from New York. The only sale by auction has been a small lot of 50 barrels Albert brand, at 14s 6d per barrel of 400 lbs.

Cement. Imports. 11,651 barrels. A line of 175 casks, Atlas brand, was sold on 25th ult., at 7s 9d to 7s 6d per cask. Privately, sales have been made of Gibb & Co.'s Portland, at 9s 6d.

Galvanized Iron.—Imports. 960 tons. An invoice of Two Cones was offered on the 8th inst; but bidding not being up to limits it was withdrawn. Privately, sales have been making at full rates, a small invoice of Queen's Head having been placed at £17.

Explanation. Red deals and spruce are sold at per foot of 9x3; T. and G. flooring at per 100 feet running; Oregon timber, redwood, clear pine, shelving, ceiling, per 1,000 feet super, Kauri pine and cedar logs at per 100 feet super; laths, pickets and slates at per 1,000 pieces. Shorts are all lengths under 12 feet.

CONSTRUCTION AND ARRANGEMENT OF SHAFTING.

The construction and arrangement of shafting, the great prime factor in transmitting power from the motor to the machinery of any establishment, is a matter of perhaps more importance than anything else in the arrangement of the plant, and because of the very high rate of speed necessary and the secure and sudden strains to which it is subjected, it is perhaps of more importance in a saw mill than in almost any other wood-working establishment.

I recognize the fact that in this country the construction of shafting has received such attention from practical men, that the great problem has been worked out until the proper construction and plans of construction has been reduced to a perfection not attained in any other country.

In the construction of a modern saw mill in which will be used the various lumber producing machines of the present day there are three things to be considered with reference to the shafting, viz, size, strain and speed.

As regards the speed of the main-shaft I hold that the higher the rate of speed made consistent with good results the more economical is the operation of the machinery. In support of this theory I ascribe the reasons, that a high speed main shaft will avoid the use of numerous counter-shafts, or the putting of very small driving pulleys on the various machines, and the reduction of power to the lowest possible minimum by direct connection; I do not hold, however, that the rate of speed of the main-shaft should be sufficient to give motion by direct connection the light machines, that require a very high speed to successfully operate, for all such should have an independent counter-shaft properly speeded to give the required speed to the machine.

Shafting should always be true, turned to a gauge and snugly fitted in bearings or boxes, having both vertical and lateral adjustment, and provided with the proper means for lubrication. The use of cheap shafting is the poorest economy. The advanced price for high grades especially for Bessemer steel, will be found a good investment.

There are two important advantages to be gained from the use of steel over iron; the first is that steel shafts are stiffer than iron and may therefore be smaller, and the second is, they will run with less friction, because of the fact that the iron usually employed in the manufacture of shafting is seamy and otherwise unsound.

In saw mills when the speed, number of pulleys, and belt tension is excessive, the torsional and tending strains on a line shaft are very great, and should be borne in mind when making calculations as to the diameter of shaft necessary, and the centre to which the bearings are fixed.

There is no positive rule for finding the diameter of shaft required, but the following well-known and universally adopted one, is approximately correct, in determing the diameter of a wrought iron shaft capable of transmitting a certain or given horse power.

"Multiply the given horse power by 125 and divide the product by the number of revolutions per minute, the cube root of the quotient will be the diameter in inches." In order to attain the best results, experienced saw mill builders have found it advisable to add 15 per cent to the results thus obtained.

It has ever been a question of opinion with individual builders as to the size and length of the first section of shafting or that which receives the power direct from the motor. That it should be of greater diameter than the remainder of the shaft, common sense would prove, but how much larger, is as yet undecided by any fixed rule. Experience demonstrates that 1 16 to 1 16 larger is practical. In making a calculation as to the diameter of this section prudence would suggest the advisability of erring, if at all, on the side of strength, for a bind or spring would necessitate stoppages for truing and lining up, that would very soon amount to much more than the increased cost of a larger shaft.

The distance between bearings should be very much less on this than on the other sections. In no case should they be further than five or six feet apart from each other. And in case of very great power a bearing should be placed on either side of the pulley receiving the power.

In fixing shafting the first important principle to be observed, is to have it perfectly level, which is obtained by the use of a straight edge and spirit level. The straight edge should rest in the bearings and they should be packed until the spirit level stands perfectly true, after which the shafts should be trued with the level in various places. A very great mistake is often made by setting shafting with the walls of a building, which oftimes is out of true, and occasions stoppages that could otherwise be avoided. Care must also be taken that the pulleys on the main shaft and the machine pulleys, or the pulleys on the counter-shaft, are in line; there are two ways of lining these pulleys, one is by the use of a straight edge made to bear evenly on the edges of the driving pulley and setting the other pulley to it, so that its edges bear easily; or if the pulleys are a very great distance apart a plain line may be used in a similar manner.

In setting the shafting of a complete plant it is a saving of time to work very slowly. A ground plan should first be drawn, the locations of each machine marked thereon, taken its required speed and the speed of the line shaft and determine the size of the driving pulleys required. There is much disagreement as to which should be placed in position, first the the main shaft and its connections, then the engine lined to it, or first set the engine, and line the shafting from it; both theories can be supported by almost convincing argument. Were I engaged to put up the shafting, and set the machines and engine, I would certainly put up the main-shaft and all its connections first, after which I would set the engine. My reason or so doing is that it is very much more practical to place a long main shaft parallel with the timbers of a building and set the engine afterwards to line, than vice versa.

In wood working establishments whenever possible the main-shaft should be fixed under the machines to be driven and at an angle, if possible of 60° to 75° as it increases the driving power of the belt.

The connections are also out of the way of the operation and can be easily and securely boxed.

If it be possible in the arrangement of the machines to so locate them that they will be on either side of the driving shaft, the strain is thus equalized as the belts will pull in both directions.

Under no circumstances would approve of toothed gearing for saw mill purposes; because of the fact that toothed gearing requires more power to produce the same results, it becomes rapidly worn, producing more or less vibration, and necessitates frequent repairs.

When it becomes necessary to run a shaft at an angle from the power producing shaft, a belt connection led over guide pulleys is cheaper, less noisy, requires less power, and if well arranged will produce better results with fewer repairs than any other plan.

To make this connection properly requires the exercise of a mechanical calculation more difficult than at first thought would appear. The best plan is to mount the idle pulleys on a spindle fixed vertically in a ball and socket seating, which may be fitted in a bracket attached to a hanger or standard by prolonging the end of the spindle and fitting it with a screw, serated washer and nut. The spindle and pulley may be set at any angle.

The spindle carrying bracket should be so arranged with a vertical adjustment in the hanger or standard. The ball segment of course can be turned around as necessary and with the above plan the idle pulleys may be adjusted to suit any position of shaft, thus obviating the construction of a special set of hanger or bracket patterns for each separate case, and at the same time ensuring the correct running of the belts main pulleys. *Saw Mill Gazette.*

GATINEAU DISTRICT.

The Ottawa *Journal* of July 20th says:—Ex Alderman Samuel Bingham has just returned from River Desert, where has been engaged in superintending the timber drive from that place to the Gatineau boom at the junction of the Ottawa and Gatineau rivers.

Mr. Bingham states that the crops up the Gatineau as far as Desert are in a very good condition, but have been slightly injured by the late rains. He also stated upon being asked whether there was any truth in the rumor reported in several Montreal and one Ottawa paper in regard to a murder said to have been committed in those regions that the people of the Gatineau district were much surprised when he mentioned the fact, and that the people of Montreal and Ottawa seemed to know more about the matter than the people living in the district where the murder was supposed to have been committed.

Mr. Bingham stated that the timber drive was progressing very favorably, much better than was expected, as the late rains had kept up the water in the river, thus preventing the logs from sticking on the rocks and causing jams. Mr. Bingham expects, if the water does not fall, to have the tail of the drive into the Gatineau booms by the 15th of August.

WOODEN TURBINES.

Wooden turbines have of late been proposed to meet the demand for an efficient and cheap water motor for small powers, and there is every reason to believe that within certain limits they will meet with a very favorable reception. Turbines, it must be remembered, have the advantage of being small in bulk for their power, and equally efficient for the highest and lowest falls, and were it not for the fact that they are constructed wholly of metal their use would probably have long since become more general. Wooden wheels can in some cases be readily procured at a comparatively low price, and, as the question of first cost and ease of repairs enters very largely into the problem of successfully utilizing small water powers for some purposes, and is of greater importance than a high efficiency, turbines have often been unable to compete with wheels of other types. This state of things, it is thought, can be changed by using wood as the structural material, thus securing the advantages of turbines without they drawbacks, and it has been found that in this way their cost can be reduced to about one fourth of that of iron turbines. In some parts of Europe wheels of this class have been constructed partly of oak and partly of yew, and the results are understood to have been highly satisfactory in every respect.—*Carpentry and Building.*

Forest Fires.

Muskegon, Mich., July 17.—For the past twenty four hours this city has been enveloped in smoke from fires in the surrounding forests. It is impossible to see any distance at all, and if it were not for occasional puffs of air from the lake, the atmosphere would be almost suffocating. There has been no rain for weeks and no sign of it. The crops are suffering severely. From all quarters come reports of extensive forest fires. The farmers about Twin Lakes, Holton, Whitehall and North Holland have been battling with the flames for days, and many of them have been obliged to move their families and household goods on account of the threatened danger!

John O'Neill, a river man, was with a companion rolling a log off a rock in the Snake rapids, when the stick swung around and knocked both into the water. The other man swam ashore but O'Neill was drowned. The *Enterprise* says he belonged to Eganville and was the sole support of his aged mother.