

## OAK AND ITS USES.

Within the last half of the present decade oak lumber has come into great favor with architects, builders and for decorative purposes where it was thought only costly furniture woods would be acceptable to the trade and to the tastes of a refined public. The history of the lumber trade for five years past demonstrates the fact that good taste and judgment have fixed upon oak as the most popular wood for all interior finish for dwellings, offices, banks, theaters and places of public resort. Of course it has been a standard wood always where strength, dumbility and plentifulness were an object, but it is only within a very few years that it has come to be acknowledged as one of the leading woods for decorative purposes where its proverbial strength and durability can also charm the eye by its inherent beauty of grain without the aid of the painter's art. If the reader doubts the popularity oak lumber has attained among architects, builders and consumers, he is respectfully referred to the price lists from 1884 up to the present. Plain sawed oak has advanced within that time from \$14 and \$18 per thousand to \$24 and \$26 per thousand, and the demand is in excess of the stocks on the market at present. More than that—within the period above mentioned, a demand has sprung up for oak lumber cut from the log in such a manner as to show the greatest beauty of its grain. This is called, among millmen and dealers, quarter-sawed lumber, and the method of cutting it has been explained more than once in the *Tradesman*. This class of lumber is in demand at present, in the proportion that where four carloads are wanted only about one is to be had. The price f. o. b. at any point having less than a thirty-five cent rate to eastern points is \$34 to \$36 per thousand for first-class stuff five inches and up in width. Extra wide and fine panel boards, say 14 to 18 inches in width, are in demand at walnut and cherry prices, say \$60 per thousand and very hard to get at that price. These prices run unreasonable in contrast with those for oak a few years ago, but there is a shortage in the market that is becoming more pronounced every day under an unprecedented demand. Oak has come to be a very fashionable furniture wood and the factories at Grand Rapids, Mich., consumed more than 35,000,000 feet last year and are on the market now for twice that amount of good, dry lumber. All other furniture factories in the country are compelled to use oak to meet competition and demands of their customers. But the demands of the furniture manufacturers compared to that for grain oak for interior finish or private, public and business houses is as only one to ten. Hence the greatest shortage in supply and the advance in prices as above noted.

Accepting the foregoing statements as facts—every one of which can be readily substantiated, and more could be said if necessary—it would be a useless suggestion to advise owners of oak timber not to part with it without a thought of its future values.

Whatever may be the future of oak lumber—whether the demand for it is a fashion that will pass away in a few years, or whether the world has just found out its full merits as a furniture and ornamental wood are not questions under discussion, but two things are clear: First, oak lumber is in good demand now; and second, the great bulk of available supply is in the southern states. We have two varieties of oak in the south in great abundance, that for beauty of grain and color meet the requirements of modern taste for interior finish and for articles of furniture and fixtures, viz: *Quercus alba* and *Q. rubra*—the first known by lumbermen as white oak and the latter as red oak and when properly manufactured it requires a trained eye to distinguish one from the other, and tastes differ as to which makes the most handsome finish, but the majority favor white oak as is evidenced from the higher price it brings in the market. But whoever mistakes one for the other is no worse off than he who mistakes short leaf pine lumber for the pure Georgia long leaf article.

With an active demand at rising prices for an article we have in its raw state in the greatest abundance, it will not be out of place to offer some suggestions as to preparing it for market. To begin at the stump. In

the preparation of timber for market, how many know how to cut down a white oak tree? Almost anyone with physical strength and a good sharp axe can cut a tree down, but there is not one in a hundred who can fell an oak tree, a good tough tree, as it should be done. There is only one way to do it right and ever so many to do it wrong. Let us select our tree, an average sized one, say thirty-five inches in diameter. We first decide where it is best to let it fall. This depends upon the nature of the ground, the facilities for loading the logs on the waggon (there are very few tram roads where tall oaks grow) and the trees standing near, for we do not want to lodge our tree nor destroy any other valuable ones. Next, which way will the tree fall? If it stands so straight we are in doubt we look at it from two points at right angles to its base, note if it leans any way, if not, see where the heaviest limbs are. This quickly decides where the center of gravity tends and any experienced axeman can fall a tree within a foot of the place selected. But suppose the tree leans greatly in one direction shall we fall it the way it leans? Certainly not, if we wish to save the best cut for lumber, because if it is a tough tree the breaking of so much of the heart would, by the weight of the tree and its branches, pull slivers out of the butt cut several feet long and cause it to split either in falling or in subsequent drying. If other conditions are favorable, we will fell it as nearly at right angles to the way it leans as possible so as to cut as nearly through the heart as possible before the tree begins to topple. Having decided this matter, which can be done in less time than it takes to write it, we take our positions. I chop right handed and want my partner to be left handed, so that we may stand side by side and chop on opposite sides of the tree, or four men may work on the same tree if two are right and two are left handed. The height of the stump will be governed to some extent by the shape of the tree; if it is "swell butted," as many of the toughest white oaks are, cut as high as convenient, if the trunk is smooth and tolerable uniform in size from the ground up, cut as low as possible. Let the stump be about two inches higher on the side opposite the direction the tree is to fall. The reason for this is apparent. If the stump is highest on the side the tree is to fall it serves as a fulcrum and the uncut center instead of breaking square off will be pulled out in slivers by the powerful leverage of the tree when the bevel of the trunk strikes the stump as it will when the tree has fallen about two-thirds of the distance to the ground. Most choppers will leave the stump on the side where they stand from two to six inches higher than the other. This is a loss of labor and some timber and a habit that once acquired is very hard to get rid of. After having cut out the first kerf compare work and see if we have made our cullings parallel. If we have left one "corner," as it is called, thicker than the other, (which is apt to be the case on large trees) we can easily remedy the mistake in taking down our second kerf. In taking down our second kerf be sure and take enough and not too much as either involves a loss of labor for no good. As the work proceeds, cut to the center leaving the corners to support the tree. It is better to cut entirely through the heart of a very tough tree before it begins to crack and thus avoid all danger of splits and slivers. When the tree shows signs of falling put in the best and most rapid work possible on the corners so as to leave little of the wood to break as possible. The last few strokes on the corners may be made to change the direction of the tree in falling several feet.

Before the tree falls, one or more skids, poles something should be placed for it to fall on to keep it off the ground for the convenience of sawing and loading the logs. Some judgment is required in placing these skids as trees are often cracked or split by improperly placing them or having them too high. After the tree has been trimmed and the brush cleared away the axeman's work is finished. In marking off the tree into "cuts" care should be taken to get the best part of it into the most desirable lengths, as twelve, fourteen and sixteen feet lumber is more used than eight and ten feet lengths. One or two inches excess of length should be allowed for crooked sawing and sun cracks. A shortness of one inch means a loss of twenty-three inches on every piece of lumber cut from the log because lumber-

men recognize nothing but even lengths. Thus a piece of lumber lacking an inch of being ten feet in length is inspected as eight feet long, a loss of 20 per cent. of timber besides the labor of handling and cost of transportation. It is just such little mistakes, blunders and carelessness as this that eat up the profits of lumber manufacturers. There is not a single step in the manufacture of lumber from the first stroke of the axe into the tree to the final disposal of its products that will not repay the most careful attention and management.

## RUNNING CIRCULAR SAWS.

(A. W. W. to the Mill Operator)

I have had ten years' experience and think I know something about running and keeping a saw in order. In the first place I will tell how I keep my saw in order. If it is a good straight saw there is little trouble. The saw should be filed straight; to do this a beginner should use a very small try square until he gets so he can file true and straight. Give the saw plenty of set. I use a common swage. It has two sides, one straight and the other concave. I use the concave side altogether, as it leaves the tooth with sharper corners than the straight side and therefore it cuts easier and will stay on the line much better than it otherwise would. The teeth should be swaged wider for soft wood than for hard. It is better to get them too wide than not wide enough. The saw will run all right even if too wide, but if not wide enough then you will have trouble, as it will get worn on the rim, impairing its strength so that it will run uneven, one time in and the next time out. When running that way stop and swage. After the teeth are swaged wide enough with the concave side of the swage take a file and tip the corner of the teeth, the longest ones the most; turn the handle of the file to the centre of the saw to make the back side the most and leave the teeth with cutting corners. Do not use a gauge, it cuts the corner square and does not leave a cutting corner, and by using the file with the handle down the back side is cut so it will clear the wood, and does not drag. I have seen old sawyers use the gauge, but I don't like it; a man can soon get so he can cut the teeth all exactly the same without it if he is careful. If my saw gets dull between morning and noon, or night, which it will, I take a good sandstone, one that is fine and hard—I always keep one by me—I hold to the saw while running and let it tip the teeth enough to bring them to an edge. It will make them cut like they did when they were first filed. Some will object to this, they think it will wear the saw too fast, but you can cut lumber to make up for all the loss in that direction and twenty times more. With a little mill I sometimes use the sandstone four times a day, twice before noon and twice after.

Sometimes when a saw is filed it will not run straight, it will run in too much, or run out too much. If it runs in the log too much, tip the corners of the teeth, with the sandstone next log, which will make it run the other way; be careful not to tip them too much, for it will dull them and make the saw run hard. If the saw pinches in the log and gets worn don't try to crowd it through, but back out and put some oil on it; if it is not too warm you can go right through, but if it is very warm, let it run a little while and it will cool off; don't put water on the saw if hot, better wait and let it cool than to spoil the saw. Some may read this who has a bad saw and objects to my plan; if that is the case the saw had better be fixed as soon as possible.

If in starting the saw is limber and wabbles bad don't start it into the log, for the saw will not run true, no matter how well it is dressed; but let it run and take a hand stick and hold it between the frame and saw, and press it to the saw until it gets warm in the collar; it will then get stiff and will run very well. You must keep it rubbing against the log enough to keep it warm, but not enough to heat it. Have the track level and straight; keep the saw hanging true, that is plumb; try it with a level or plumb-bob; make it hang true, keep it on a line with the carriage. The "lead" that so many think a saw will not run without is all stuff; the saw will run if it is on a line with the carriage, but the front of the saw should set so that if the teeth just strike the log the back-side should miss it about one-