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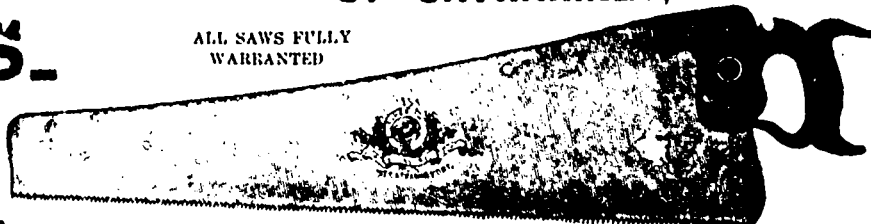
SAWS.

Sole Manufacturers for the Dominion of
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ALL SAWS FULLY
WARRANTED

denser and harder the wood, other things being equal. Not only is the closeness of texture an indication of the hardness and strength of the timber, but the size, frequency, and distribution of the radial plates which bind the annular layers together may be taken as a very close illustration or sign of the character of the wood and its ability to resist strains, especially a breaking stress. The micro-photographs of good and bad show that in the strong kinds the concentric layers are close in texture and narrow in width and the radial plates numerous, wide, long and stout, while in poor stuff the opposite characteristics prevail. The practical application consists in having such enlarged photographic sections longitudinal and transverse of standard pieces of timber bearing a certain known maximum strain, and rejecting any piece which the assisted eye detects to have fewer rings per inch of diameter, fewer fibres or fewer radial plates per square inch of section, or to use such pieces with a greater factor of safety. The advantage of the method is that it allows all timber for important positions to be tested before being used. —*Journal of Progress.*

LIQUID GLUE.

With any desired quantity of glue, use ordinary whiskey instead of water. Break the glue in small fragments and introduce these in a suitable glass vessel, and pour the whiskey over them. Cork tightly and set aside for three or four days, when it will be ready for use, without the necessity of applying heat. Thus prepared, the mixture will keep unaltered for years and will remain permanently liquid, except in cold weather, when it may be found necessary to place the bottle in warm water for a little time before using. The vessel in which it is kept must, of course, be kept always tightly corked, to prevent the volatilizing of the solvent.

A French formula for a liquid glue directs that a solution of eight ounces of glue be made in a half-pint of water, in the usual way, by placing it in a vessel of water until solution is effected. To the solution it is directed that 2½ ounces of strong aqua fortis (nitric acid) be added, stirring all the while. Effervescence will take place with the evolution of orange nitrous fumes. When all the acid has been added, the liquid is allowed to cool. It should be kept in a well stoppered bottle, and will remain permanently liquid. It will neither gelatinize nor putrefy, and is said to make a very serviceable cement for various domestic uses, and as repairing cabinet-work, chinaware, etc.

Another formula directs that a jar or bottle be filled with glue broken into small fragments, and the same covered with acetic acid. It should then be placed in a vessel of hot water for several hours until the glue is dissolved. —*American Druggist.*

"The Proper Study of Mankind is Man," says the illustrious Pope. If he included woman in the list, he would have been nearer the truth than most poets. Dr. R. V. Pierce has made them both a life study, especially woman, and the peculiar derangements to which her delicate system is liable. Many women in the land who are acquainted with Dr. Pierce only through his "Favorite Prescription," bless him with all their hearts, for he has brought them the panacea for all those chronic ailments peculiar to their sex; such as leucorrhoea, prolapsus and other displacements, ulceration, "internal fever," bloating, tenacity to internal cancer, and other ailments. Price reduced to one dollar. By druggists.

FOREST TREES.

Eleven years ago I examined the stumps of two white oaks and the grave of a third, which told this singular story by circumstantial evidence, so strong that it could not be doubted. In the year 1502 an acorn fell about one and a half miles from where I am now writing (Rockville, Ind.), and by favorable chance sprouted and grew to an oak. In 1591 another acorn sprouted about 20 feet distance from it. It may have grown on the tree before mentioned, as it was then 92 years old. In 1731 a tornado from the northwest blew down a still older oak which, in its fall, struck against and greatly damaged the top of the one born in 1502. There is to day the well-marked grave of the fallen giant, the dirt piled upon the southeast side of the hole, and a long depression in the ground where the trunk fell and rotted till not a vestige of its wood can be seen to-day (though some traces of the bark of the roots can). This depression points to the stump of the damaged oak. The two younger had been freshly cut down when I examined them. The stumps were about four feet across, and there was not over an inch difference between their diameters, though ninety-two years difference in their ages. The younger had large, healthy top, no broken or dead limbs, and it had put on rings of growth from the beginning of more than average size. The older one had been injured in its branches by the fall of the still older one before mentioned, in 1731, and for fifty-seven years had put on very small rings of growth (about 25 to 30 years to the inch instead of twelve to fifteen as it should), when a new set of branches developed to take the place of the damaged ones, and the rings began to increase in size and gradually attained to the average. I examined their tops, which coincided with what has gone before. There were the peculiar knots in the top of the older one where dead limbs had rotted off and were healed over. (Any expert timberman will readily recognize them.) During this delay the younger oak caught up with the older one in size. The size of a tree is a very uncertain indication of its age.

In all the cases of the hundreds I have examined of the oaks (the oldest trees of the forest I think) I never saw but one that was here when Columbus discovered America. That one was by far the largest I ever saw, and was over 600 years old, about twice the age of the other largest ones. I could not get its exact age, as it was so decayed near the heart. I could not distinguish the rings. It was between six and seven feet in diameter, and forked about sixty feet up, and each fork was as large as the other largest trees. It was not sound enough to make good lumber, being what in this region is called "doughty," a state between soundness and rottenness. It had been down a year before I examined it (being out of the country before it was cut), so that it was very difficult to examine it. I have mislaid memorandum of it but it would be about as follows: At the age of about 200 years it had some misfortune which caused it to form about 100 small rings. It then regained its health and formed normal rings for about 140 years. Then another mishap caused small rings till within the past fifty years, when it was putting on fair growth again. This tree was about one and half miles southeast of Rockville, Ind., and was noted

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amongst hunters and woodmen. It was a disagreeable showery day when I examined it, and for that reason I did not examine its top to see if dead, and lost, and healed over limbs coincided with the small rings, but I have often done so in other cases, and found them to coincide.

Last May, 1884, I examined a sycamore and water elm in the Wabash river bottom, the former six feet in diameter and the latter five, each 180 years old. They stood about 150 feet apart. They were standing on the upper end of a newly made bottom (I mean now as compared with the higher and older bottoms a little more inland from the river, say 200 years old). This was the largest sycamore I ever saw that was sound to the heart. I have seen hollow ones nearly eight feet in diameter. This tree seems never to have met with any mishap till the logman came along, as the rings of growth were all unusually large.

These trees very probably sprouted 12 to 15 feet below the present surface of the bottom. They generally begin life on the lower end of river sandbars, and as sedimentation builds up the surface they put out new surface roots at every two or three feet of elevation. Such trees, with their several sets of roots, are often seen in drift piles, and also still standing on the verge of a steep river bank where one side is exposed by the erosion of the river. Their roots are often hollow like their trunks, the hollow, and root too, decreasing in diameter downward till it terminates in a point, like a conestanding on its point. In the southwest corner of this county is a hollow cottonwood stump on what is now a high bottom of the Wabash in which the hollow extends downward 12 feet. Mr.

Joseph J. Daniels, an intelligent, observing man, on whose land it stands, told me so. Such sitting up over the surface roots would kill most of the upland trees, or those that grow from the seeds on the high bottoms. —*John T. Campbell in American Naturalist*

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The limits are supposed to contain about two hundred millions superficial feet. (An estimate is now being made.)

The timber is mostly Oregon Pine of an excellent quality. The average haul, only about half a mile to floatable water. The run thence to mill, 30 miles. Full particulars furnished on application.

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