

second, this being the proper speed to give the branches the lifting power to lift the shavings from the machines on the floor below.

Now it is evident that at A there is a certain suction power, or pressure in the main pipe. The volume of air passing through the main at this point, A, is equal to the volume of air coming into it from all the branches combined. This is quite evident. Between A and B there is an 8-inch branch inlet, with 50 square inches of draft of equal density to the draft in the main at A gaining entrance, and so it is evident that, although at the point B the same area of draft is passing through the main as at A, yet the volume of draft here is only equal to the volume let into the main by the balance of the branch draft behind B. At A, so to speak, the volume is 380, while, owing to the relief offered by the first 8-inch branch, at B the volume is reduced 50 degrees, making it 330.

As the point C, following the same line of argument, the volume of air has been relieved by the 16-inch entrance to the value of its area, which is equivalent to 80 degrees. Thus, at C the volume of air is only 380 minus 50 minus 80 or 250, as compared with the 380 degrees at A, and so on down the line, till we come to the point G, where the volume, or density of the draft is only $380 - 50 - 80 - 50 - 50 - 50 - 50 = 50$, as compared to the 380 degrees of density at the point A.

As will be seen by this, all the air that is passing through the 22-inch main pipe at the point G is that which gains entrance into it through the 8-inch inlet behind this point. The speed of draft through this far end branch, we will say, is equal (although it is not, being so far away from the fan) to that through the branches in front of it, that is, 150 feet per second. Now imagine this one stream of air, loaded with wet shavings from a heavy surfacer, being discharged into this 22-inch space which has an area more than seven and two-thirds times as great, and tell me where those heavy water-laden shavings will go to.

Will they fly along to the fan carried upon the wings of a draft seven and two-thirds times less powerful than that which carried them up into the main, or will they drop and lodge in the main at G, owing to the fact that the draft here is not forceful enough to carry along to where they will come within the added strength of draft given in the main by the entrance of the next branch nearer to the fan?

If these shavings were of feather weight, such as come of a very high speed, slow-feeding machine, working upon kiln-dried stock, there is a possibility that they would be drawn into the exhaustor, but as for heavy, water-laden shavings coming from a fast feeding surfacer, or matcher, there is no possible doubt but that they would, after using the forceful influence of the branch inlet, drop to the bottom of the main at G and stay there until pushed along by hand.

This, I think, is all very evident, and in the wooden pipe system I have already referred to, this clogging of shavings at the tail end of the system was constantly happening. For years it has happened regularly whenever any heavy cutting was to be done on the tail end machines, and to-day it is doubtful if the people who run

this mill know just why their pipes do clog.

And now, if my readers will apply the same line of reasoning as I have adopted above to a reducing main, they will, no doubt, readily see why manufacturers who contract for the installation of complete systems of piping always reduce according to the area of the branch pipes that gain entrance into the main.

EXPORT OF BRITISH COLUMBIA SHINGLES.

With a view to ascertaining what proportion of the British Columbia shingle product is exported to the United States, the CANADA LUMBERMAN communicated with some of the leading manufacturers, whose replies are given below:

SPICER SHINGLE MILL COMPANY, LIMITED, Vancouver: As to the quantity of shingles shipped from British Columbia to the United States, I can state that after enquiring and looking into this matter, I find that during the last two or three years about 10 to 15 per cent. of the shingle output has gone to the United States.

As to the relative cost of labor, timber and mill supplies between British Columbia and Washington, it may be true that on account of some Japs and Chinese being employed here in the shingle mills, that the cost of labor is probably a little less than in Washington. It must be remembered, however, in this connection that the Chinese and Japanese do not do so much work as a white man, and so far as the latter are concerned, we certainly pay as high wages here to white labor and inexperienced mill men as they do in Washington. Shingle bolts have always been at least 25 per cent. lower in Washington than here, and shingle logs are about the same. In regard to mill supplies, it is a well known fact that the Washington mills have a considerable advantage over us in this respect. I should say that there is a difference of from 15 to 25 per cent.

The reason why the British Columbia mills sell the few shingles in Washington which they do, is altogether on account of the superior quality as compared to the Washington article, the dealers in the United States being willing to pay about 25 cents a thousand more for our shingles than for the Washington product.

E. H. HEAPS & CO., Cedar Cove: We are sure that the proportion of the British Columbia shingle product that is shipped to the United States is less than one-third for the whole year, and at the present time we do not think it would amount to one-fifth. We might also say that the cost of labor and timber is about the same in British Columbia as in Washington, and that the reason why we are able to sell in the American market is because our shingles are of a superior grade, and many of the American buyers prefer them even at an advance of 25 cents per thousand.

HASTINGS SHINGLE MANUFACTURING COMPANY, Vancouver: We are satisfied that not one-sixth or one-eighth of the shingle output is shipped into the United States. We are satisfied that our Canadian trade is gaining so much in Manitoba and the North-West and requiring our product in the way of shingles and lumber, that the present capacity would just about supply our own market if we had it to ourselves, and we would not require to ship into the United States. It is an injustice to the Canadian manufacturers of lumber and shingles that the Americans are allowed our market free of duty, while we are handicapped by a duty in the American market.

ROBERTSON & HACKETT, Vancouver: We have not up to the present time sent any shingles into the United States. The timber may be cheaper here, but the cost of labor is the same as in the State of Washington.

BRUNETTE SAW MILL COMPANY, LIMITED, New Westminster: We are not in as good position as some Vancouver makers to say what proportion of the

British Columbia cut of shingles goes to the United States. Our shingles are preferred in the States on account of their better quality, greater care being taken in their manufacture.

PACIFIC COAST LUMBER COMPANY, Vancouver: With respect to the statement made by the Mississippi Valley Lumberman to the effect that two-thirds of the shingle product of the British Columbia mills now goes across the line into the United States. This statement is utterly untrue, and the writer who penned it is evidently not a worthy journalist. We do not know that this magnified self-importance is likely to do any harm to the British Columbia mills, we fancy they could all manage to live without any trade at all from our friends to the south.

The facts as we know them are: Probably more shingles have been shipped over the line this year than last, they have been going at the rate of 60 million shingles a year. The capacity of all the mills will probably run about 600 million, so that instead of two-thirds, one-tenth of the entire cut would be the very outside limit of these shipments.

Further, what shingles are being shipped from here in a way do not compete at all with the shingles made in Washington, as the same class of shingles is not made on both sides of the line. On our side upright shingle machines alone are used. These machines are comparatively slow-running and turn out a well-made shingle; then our packing and sorting is more carefully done, so that our shingles, made from exactly the same timber, are worth from 25 to 50 cents more per thousand to the consumer than the Washington product. Across the line the method of manufacture is different, fast running horizontal machines are used, big cuts and low cost of production is the aim, quality and everything else is sacrificed to this, the result is a very shabbily made article that will not command in any market the same price as our shingles. Any manufacturer in Washington State will acknowledge this. No matter what the Mississippi Valley Lumberman may say, we cannot begin to make shingles as cheaply as our neighbors immediately to the south are doing. We are now paying from \$7 to \$8 per thousand feet for cedar logs; they may have to pay on the average about one dollar more, so that in the cost of timber we might have an advantage of ten or 12 cents per thousand, but this is much more than overbalanced by the greater cost of manufacture in our case.

The only thing that makes the trade at all possible is the fact that we produce a better finished article. If the Washington mills produced the same quality of shingles as are produced here and could supply the demand on their side of the fence, not a shingle would be shipped from here. Any that are shipped go to such markets in the United States as demand a well made article and are willing to pay a fair price.

NOVA SCOTIA LUMBER ASSOCIATION.

A large number of the leading lumbermen of Nova Scotia met at Amherst on December 31st and decided to organize an association to be known as the Nova Scotia Lumber Association. Officers were elected as follows: President, Alfred Dickie, Stewiacke; vice-president, J. H. Livingston, Wentworth; treasurer, Ray Kent, Truro; secretary, D. G. McDonald. The following, with the above officers, compose the executive: Chas. J. Willis and N. A. Rhodes, Amherst; Henry Hunter, Wentworth; T. G. McMullin, Truro, and J. D. McGregor, New Glasgow. A request has been sent to H. J. Logan, M.P., to arrange a meeting of the Intercolonial Railway authorities to confer with the Executive at their next meeting in reference to freight rates.

A curious freak of nature was discovered recently at High Wycombe, Eng. A quantity of Canadian birch timber arrived at one of the chair factories there, and in the centre of one piece 3 in. in thickness there was found a young birch tree 2½ in. in diameter, which had escaped the saw. It had enjoyed an independent growth, and it is supposed that years ago a seed fell into hollow part of the old tree and developed into a sapling, which forced its way up through the trunk of its parent. The hollow was completely filled a distance of several yards. We are told by Timber that this curiosity is to be preserved.