record but a single pronounced mark for each revolution. With a four-knife head running 4,500 revolutions per minute and a feed of 90 feet per minute, these "revolution marks" would be about ¼-inch apart. True, there may be other less noticeable marks between, which merely confirm the fact that the knives are not all cutting alike.

In fact, such a condition is all that can be reasonably expected under the circumstances, for it is a mechanical impossibility to joint or true off the edges when standing still so that each will take an equal share of the cut when running.

If under the above conditions of speed and feed every knife had cut equally the "individual knife marks" would have been only about 1-16 of an inch apart. But to make every knife do its duty they must be trued off while running, as may now be done by the devices furnished with the best planers. The distorting effect of centrifugal force is then overcome, and the knives can be easily resharpened without removal from the machine or the necessity of resetting.

THE AMERICAN INVASION OF BRITISH COLUMBIA

With reference to the American capital going into British Columbia, Haywood Brown, a prominent capitalist of New York City, has this to say: "Within two years every New York capitalist interested in timber will have a finger in the British Columbia pie and will, as many wideawake American capitalists are doing now, wrest from the loose grasp of British Columbians the multifold opportunities with which this province abounds. Why do not British Columbians wake up and realize the value of their own timber before American capitalists reap benefits in advance of those who have lived the major portion of their lives in this province? The people in this country do not realize the value of the timber along the east and west coast of Vancouver Island and on the mainland, particularly in the western section of British Columbia, but it is gratifying to notice that British Columbians have at least learned a lesson from the mistake of Washington, Oregon and California, and are preserving the second growth. But you British Columbians who have been born and 'raised' in British Columbia do not appreciate or realize the value of your timber and probably will not until Americans have got ahead of those who had the first chance."—Another widely known American, formerly a railroad promoter, W. A. Kappler, of Cleveland, Ohio, expresses himself even more directly: "British Columbia is the American continent's last resort for timber. Michigan, of course, is a back number so far as timber is concerned, and the timber of Washington, California and Oregon is practically gone. Now the eyes of American capitalists are looking towards British Columbia, and should this province in time be unable to yield more, then Americans must build themselves mudhouses or invent some other substitute for timber."

COMPARATIVE ECONOMY OF LUBRICATING OILS AND GREASES.

The analysis of lubricating greases is a rather complicated procedure, and one which yields little information as to whether the sample is suitable for the purpose to which it is to be applied. It is possible, however, by determinations of the water and the ash present in greases to give important information regarding the presence of foreign materials. The variation in these constituents is clearly displayed in the following table from a report by Arthur D. Little, the Boston chemist. Designating letters have for obvious reasons been substituted for the actual names of the samples:—

Designation.	Cost. Cents.	Water. Per cent.	Ash. Per cent.
A	8	2.48	4.56
B	11	7.45	0.62
C	4	20.50	1.92
D	7	4.84	5.54
E	16	1.53	1.53
F	1¾	1.18	7.68
G	5	2.45	2.46
H	6	0.72	2.20
I	6	1.22	3.69
J	6	1.04	1.65
K	5	1.43	4.34
L	7	0.96	2.73
M	15	2.64	2.28

These greases are, on the whole of very good character, only one containing an excessive amount of water, but Mr. Little considered the prices excessive, and advised that six cents per pound was as high as need be paid. He further stated that the samples were practically all of greases made with a small amount of soap as a hardener or solidifier. In some of the cases an alkali soap was used, while others contained a lime or alumina soap.

A recent investigation of the quantity, quality and cost of oils used by various mills indicates conditions so varied as to point the moral of the value of expert advice in their purchase. In this case the chemist, Mr. Arthur D. Little, of Boston, by whose courtesy the results and conclusions are presented, found a range in the cost of machine, engine and special oils (exclusive of cylinder oils) from 14 to 48 cents per gallon, as appears from the following table:—

Name.	Price. Cents.	Sp. Gr.	Flash.	Fire.	Cold.
Machine	14	0.872	399	464	36
Machine "A"	16	0.872	388	462	36
Machine	14	0.926	329	361	28
Machine	15	0.932	352	385	17
Engine	23	0.914	410	470	8
Engine "B"	25	0.661	414	467	8
Special engine	48	0.907	405	446	10
Signal oil	45	0.845	265	283	30
Crank case	18	0.677	514	590	29

The real value of the oil is shown by the constants revealed by the investigation. With qualities almost identical there is material variation in the price, as, for instance, between the first and second samples and between the different engine oils. Mr. Little's opinion, based on extended experience in similar cases, was that 12 cents per gallon would be a fair price for these oils, taken as a whole. At this figure the mills investigated would be able to save nearly $1,200 per year by the use of the cheaper oil without detrimental results.

While operating a gang saw at the Carney Lumber Mills, Owen Sound, Ont., Antonio Leduc met with a serious accident. He was using an iron bar in order to remove a sliver from the gang saw. The machine was in motion, and when he loosened his grip upon the bar it recoiled and struck him a violent blow on the jaw, fracturing it in two places. A portion of his tongue was cut off as the result of his teeth coming together.