

THE EVOLUTION OF THE SAWMILL.

A paper with this title was read last month by H. S. Seage before the Fire Underwriters' Association of the Northwest.

For the past five or six years, from the underwriters' standpoint, the sawmill has been regarded by many as a source of evil. It might be a thing of strength and beauty, but it could bring no joy or profits to the treasury of the insurance company. So we find that as early as 1892, immediately following the report of the sawmill committee of the Michigan State Association, many companies sent to the local agent a ukase, placing saw and shingle mills on the prohibitory list; such a cry was raised against the sawmill that the writer was induced to inquire somewhat into its history and learn, if possible, from whence it came.

The first mention I have been able to find of the sawmill, and by this is meant a saw used for cutting plank or boards operated by power, is with the ancient Egyptians, who operated a ponderous blade of bronze with serrated edge. The log was placed on end and secured to posts driven in the ground; to the ends of the bronze blade were attached ropes, and the heavy blade was drawn back and forth, and by attrition, wore its way into and finally through the log; but this gave way in time to improved methods; and as the practical benefits of the sawmill became demonstrated, rewards were offered for its improvement, and it reached such a degree of perfection that the Greeks deified the inventor of the saw and called him "Perdix."

A manuscript of the thirteenth century describes a sawmill operated by oxen treading a horizontal wheel; in 1322, a sawmill operated by waterpower was constructed at Augsburg, Germany, but was opposed by the hand sawyers, who feared that the machine would ruin their occupation, and consequently a mob burned it and then carried off the iron parts, and each piece was buried or disposed of secretly, so that the thing should die and never be heard of again; but this did not stop the sawmill and it slowly spread, notwithstanding it met with opposition from parliaments and people.

In the fourteenth century, England, by parliamentary enactment, made it a criminal offence against the king to erect a sawmill, because "The trees which might goe to make ye masts for ye king's ships would be destroyed," and in consequence, for over a hundred years, the Dutch furnished England with all its lumber. The Dutch operated sawmills by windpower as early as 1410; the vast timber districts of Norway and Sweden invited the introduction of the sawmill as early as 1530; by this time the sawmill had become such an important factor that the Bishop of Ely, then British ambassador to Rome, thought it his duty to give a minute description of a sawmill operating at Lyons in 1555; but such was the opposition in England to its introduction that no one could get permission from the crown to build a mill; but, in 1663, a Dutchman secretly built a combined saw and grist mill, the first sawmill in England, near London, but it was never operated, as an infuriated mob of ship carpenters destroyed it and sought to kill the poor Dutchman, but he escaped. But so urgent was the demand for building lumber in England that one Houghton set before the public in speech and press the advantages offered by the use of power sawmills, but it was not until 1767 that, at the request of the Society of Arts, a special decree was issued by the king, giving permission for James Stanchfield to build a mill at Limehouse. But the king refused to give it his protection, so great was the prejudice of the people, and it was destroyed by a mob two years later.

So England continued to buy its lumber of the Norseman and the Dutch.

The colonies in the new world, feeling the need of sawed lumber, sent to Holland for the machinery for a sawmill, the contract price for which was about \$180, exclusive of the charges "of ye ship which should transport it." This arrived and was set up at the falls of the Piscataquay in 1620, and this is said to be the first saw mill in the new world. Shortly after, the Dutch West India Company constructed three sawmills in New York, to be operated by wind; one of these located on Nut, now Governor's Island, and was leased for five hundred boards yearly, one-half to be paid in pine and one-half in oak. The colony of Massachusetts Bay, feeling the need of lumber,

made application to "The Court of Assistants" in London for the construction of a saw mill, and in a letter to Governor Endicott, dated 1628, he is directed "To give approbation and furtherance to Francis Webb in setting up his sawmill, to be sent over in the good ship 'Lyons Whelpe'."

Although hindered by restrictive and exclusive conditions of laws, the sawmill slowly extended over New England, and we find it entering the wilds of Maine and New Hampshire in 1634; into Vermont it went in 1636, and into Rhode Island in 1639. The State of the wooden nutmeg did not feel its presence until 1654, and New Jersey not before 1682. William Penn and Caleb Pusey brought over from London a sawmill ready framed, and it was set up on Chester Creek, and in a letter to the "Free Society of Traders," they declare that "the sawmill has been of great use and comfort in the colony in the cutting of planks and staves for the better construction of meeting houses and other buildings." This was in 1683, and is the first recorded sawmill in Pennsylvania.

Previous to 1645 all the sawmills in use in the colonies had been brought over from Holland or England, but in that year the Court of Massachusetts adopted a system of laws called the "Body of Liberties," which provided that "there should be no monopolies, but for new inventions a patent should be granted for a short time only." One of the first to apply for exclusive privilege under this first New England code was Joseph Jenckes, of Lynn, and on the 6th of May, 1646, the court resolved that "in answer to the petition of Joseph Jenckes for liberty to make experience of his abilities and inventions for ye making of new invented sawmills to goe with water, for ye more speedy dispatch of worke than formerly, this petition is granted for fowerteen years without disturbance by others, so that his study and cost may not be in vayne or lost."

You will see by this brief outline that the sawmill had hard work for existence; it was opposed by the land sawyers, who thought it would take away their occupation and deprive them of labor; kings and parliaments enacted or declared laws against it, but so necessary and useful a thing to the people had it become that it overcame all prejudice and law, and took up its march with the pioneers who turned their faces toward the untrodden wilds of the west, and it was destined to cut its way through the vast forests and transform these into fields of grain and gardens of flowers.

Gen. Lewis Cass in 1814 (then Territorial Governor of Michigan), with three others, built a small sawmill on a creek tributary to the Muskegon river; but this was short lived, being destroyed by the Indians the year following; the first mill in Wisconsin was erected by consent of the Sioux Indians near Prairie du Chien, in 1819; but in one of the raids of the Winnebagoes, this was burned a year or two later.

But Michigan, Wisconsin and the great northwest was to be populated, and the sawmill was to be an important factor in the work of building its towns and cities, and its growth and improvement has been gradual and sure, and from the bronze saw of the ancient Egyptians, the evolution and growth has been constant, till to-day we see the great creations, the result of modern science and skill; from the slow process of attrition we now see the saw cutting its way merrily through the log at the rate of three hundred feet per minute.

No element in the development of the northwest has had greater influence than the saw mill—it has constructed nearly all its railroads and it has built its towns and cities—it populated the east and west shores of Michigan and opened up its northern limits—it built the great cities of the Saginaw Valley, of Muskegon, and laid the foundation of the second city in the State, Grand Rapids.

It built the cities of Oshkosh, Fond du Lac, and opened up the vast territory of Green Bay; it took up its line of march down the Father of Waters and laid the foundations of Moline, Rock Island and Davenport; in its march it has carried a boom of success and in its wake it has left its blackened trail; it has created more millionaires and in turn has been the cause of more poverty and suffering than any other industry; it has built more cities and towns, it has peopled more counties as it advanced, and in its decline has left these to decay or blackened ruins.

Within the jurisdiction of this association we are now feeling the influence of this declining industry, not only in the loss of premiums,

but in losses by fire as well; this industry has always faced us with a moral hazard, even in its palmy days, but now in its decline, to many it bristles with sparks and is lurid with flame.

ELECTRICAL COAL CUTTING.

The above subject has lately attracted the attention of coalmasters, and an evening or two ago a number of gentlemen connected with the industry were invited to East Plean Colliery to witness the working of a coal-cutter patented by Mr. Hurd (a name well known amongst the pioneers of this class of labor-saving machinery). The principle of the machine under notice is a bar-cutter worked electrically from a motor cased within the machine, and the advantages appear to be: That the bar cuts independent of position, either under, or, as in the East Plean Colliery, between seams of two qualities of coal. There is almost absolute steadiness, a great feature in any electrically-driven machine, the vibration is practically nil, and consequently no sparking from the encased electric parts. The electric motor and gearing, the parts being few and simple, are built into the machine, which, being cased over, forms a most substantial tool, which would not suffer much from falling roof or other such accident. An ingenious principle is introduced of entering the cutter-bar from the reverse side of the machine, to which a patent self-cleaner may be applied; it then makes its own holing, and can, when required, shear the coal vertically; this bar can be separately adjusted while the machine is in motion to meet any irregularities of the road, and keep the holing continuously in the best position. The machine was worked downhill on an incline varying from 1 in 5 to 1 in 10 (a somewhat difficult operation), cutting 3 feet 6 inches deep at rate of about one yard in two minutes, a speed quite sufficient for the present system of laying rails. The cutting being carried on at night, the visit was somewhat short, but those present expressed themselves as satisfied with the work done during the limited time at their disposal. The machine has been working at East Plean for some months. *Glasgow Herald.*

BRITISH COLUMBIA FRUIT.

W. G. Henry, president of the Fraser Valley Fruit Growers' Association, writes an enthusiastic letter regarding fruit growing in British Columbia. He says that the industry is developing fast, and people are beginning to give attention to the industry. When the new orchards are bearing, he says they will be able to supply Manitoba with the finest plums grown in the world, at as low price as can be grown anywhere. Regarding the poor condition of British Columbia fruit shipped this year to Winnipeg, he said this was owing to the fruit being too ripe, delay in shipping, and close cars. The association have shipped five cars of plums this year to Manitoba and the Territories, he says, with good results, except in the case of those sent to Winnipeg. Mr. Henry is confident that with a little experience and with their new orchards coming in, they will eventually supply Manitoba with all the plums required, in good condition.—*Commercial.*

—A centenarian named Bissonette was in Cornwall last week. He is 106 years old and is living with his aged wife, who is only a few years younger, near Mille Roches. The old man was born at Coteau du Lac, and when a mere boy was left with a family at Martintown, by whom he was brought up. He was left in charge of the homestead of this family during the troublous times of 1812-13, his employer being an officer of the old Glengarry Regiment. Bissonette is still in full possession of all his faculties, but is very feeble.

—A lapse of gallantry occurred the other day in Professor Tait's class at Edinburgh, says *The Woman's Signal*. Under the new régime the front bench is allotted to ladies, and it happened that on this day the fair students numbered eight. The subject of discussion was crystals and their geometric forms. "An octahedron, gentlemen," went on the Professor, "is a body with eight plain faces. For example—" A rude and reactionary male at the back saw his opportunity. "Front bench!" he shouted.